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AND

AMERICAN GARDENER'S MAGAZINE.

"Agriculture at once the cause and evidence of civilization."

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CONTENTS.

Manures,	257
The identity of the French Manure called "Animalized Charcoal,	257
On Manuring,	258
Miscellaneous Manures,	260
Remarks of Menvres in General,	262
Remarks on the Agricultural Survey of Massachusetts,	265
Seed of the White Pine,	265
Green's Straw Cutter,	265
Items,	266
Circular, (Continued)	266
Advertisements,	268

NEW-YORK FARMER.

AUGUST 15, 1837.

MANURE.—Of so much importance, in the estimation of intelligent Agriculturists, has the subject of *manures* become, that we do not hesitate to devote a large space in the present number of the Farmer to articles from various sources in relation to it.—Those directly engaged in cultivating the soil, who *read* as well as profess to believe in the importance of agricultural books and publications, and *reason* upon what they read and see, will readily perceive and appreciate the advantages possessed, though *unimproved* by those in the immediate vicinity of large cities. Heretofore little attention has been given to the subject, except the mere removal, to get it out of the way, and the sale to defray, *in part*, the expense of removal of *street* and *stable* manure. The most valuable materials have been wholly overlooked, and thrown away. It is hoped however, that the necessary investigations have been made, which will lead those, who are so much interested in the health, economy, and credit of the city of New-York, to introduce a new system, now devised, and ready for immediate application, which will not only remedy present evils, but also lead to important benefits both to our citizens and neighboring tillers of the soil.

The following remarks of the Editor of the Farmer's Register will aid us in the object we have now in view, viz, of showing our readers the importance of giving more attention to manures, but especially to the value of night soil when properly prepared for use:—

From the Farmers' Register.

THE IDENTITY OF THE FRENCH MANURE CALLED "ANIMALIZED CHARCOAL" WITH A PREPARATION OF HUMAN EXCREMENTS.

It was not a little singular, that while the article on the filth of towns, and means of converting it to manure, in the last No. was passing through the press, that we received from D. K. Minor, esq., editor of the New-York Farmer, a letter of inquiry on the same general subject, and stating his design of saving and converting to manure, the immense amount of fœcal matters, which are produced, and serve merely as an enormous nuisance, in the city of New-York. Mr. Minor in conjunction with a French gentleman, who is acquainted with Payen's method of preserving and utilizing these substances, is preparing for the execution of his plan; and every friend to the agricultural and general interests of the country must heartily wish success to his public spirited and most important undertaking.

In answer to Mr. Minor's inquiries, we forthwith sent the sheets of the publication then in progress, expressing our views on the subject—large extracts of which he has re-published in the New-York Farmer, as well as other articles on the preparation of "*poudrette*" and "*urate*," which have been copied in the preceding pages. It is hoped that attention is now strongly attracted to this heretofore neglected subject, and, whatever may be the methods and means adopted for attaining the end that the main objects of benefitting health, and aiding fertilization, will be successfully and profitably reached.

In addition to all that we furnished on this subject, in the last No. and communicated to Mr. Minor, and to the information which he has derived from other sources, we have re-published on the last page; some articles from the last London Farmers' Magazine, (of June, 1837,) which speak of the qualities and value of Lance's "animalized charcoal;" and it appears from another much longer article, (of no worth in other respects,) from the same eulogist of the manure, that the compound is similar to the "animalized charcoal," manufactured at Copenhagen, and in France—and that human excrements form the basis, and principal fertilizing material of all. An account of the effects and value of this new manure, "animalized charcoal," from an English periodical, was given to the readers of the Farmers' Register, at page 120, vol. iii.: and a much more full and explanatory account, at pages 568 to 570, vol. iii., which was translated for this journal from a new French publication. It is, doubtless, this same "animalized carbon," which is described as Payen's and Buran's manure, in the piece re-published at page 128 of our last number. Some mystery, and perhaps some quackery, on the part of the manufacturers of the manure, was evident in the earlier accounts; as the discoverers

wished at first to pass off their "animalized carbon" as the refuse or offal product of the sugar refineries—a far more costly article, and which was known to be a very rich manure—just as it now seems that Mr. Lance wishes to have his manure rated as pounded bones. But however the manufacturers and salesmen might desire to conceal the nature of the materials they used, and to have them believed to be such as are more costly, and less nauseous and offensive—it is very different with the public; and the discovery of the material used for the preparation of the "animalized charcoal," is precisely that which gives the great and almost the only practical value to that manure. The genuine article, composed principally of blood and sugar, rich as it might be, was too scarce and too costly to be of much benefit to agriculture; but the counterfeit article, which merely from its comparative cheapness was suspected to be "adulterated," promises to be highly valuable and important, because the materials are abundant, and their removal or consumption, in any way, will be beneficial. Yet *cheap* as is this manure considered in England, (about 1*s.* 6*d.* sterling the bushel, and 35 shillings the ton at Copenhagen.) compared to the bones and the refuse of sugar refineries, with which it is compared, that price, or the half of it, would make an enormous profit for the manufacturers of the compound manure, if prepared as Mr. Minor proposes—and so would the fourth of that price, if mild calcareous earth was the disinfecting and preserving ingredient used, according to the plan proposed in our last number.

If, then, we are right in supposing that the pretended "animalized charcoal" described in the two articles above referred to, is indeed simply human fœcal matter prepared for manure, it gives to those articles a new interest and value—and we recommend a recurrence to them to Mr. Minor, and to all who are sensible of the importance of the object of his enterprise. As the first article above referred to is short, it will be republished here: and for the much longer piece translated from the French, readers are referred to our former publication, commencing at page 568, vol. iii. of Farmers' Register.

'Animalized Carbon, a new Manure.

'This substance is of French origin, and its manufacture is secured by patent. It was discovered by a French chemist; but that it is a substance easily manufactured may be inferred from the fact of its being shipped free on board for 35*s.* per ton. Mr. Joseph Owen, of Copenhagen, acquired the knowledge of the manufacture from the patentee in France, and has since established a manufactory on his own account in Copenhagen. His traveller, a Danish gentleman, was the first to introduce this new manure to the notice of the Scottish agriculturists. We have not had an opportunity of seeing a sample of it, but it seems it has been tried last year by Mr. Dalgairns of Ingliston, and Mr. Inches of Cardean, who, we hope, will favor us with their opinion of its efficacy. We understand that the Danish gentleman has disposed of 250 tons of it in the counties of Forfar and Kincardine. Mr. Owen's card gives the following account of its nature, and the mode of using it.

"The chief excellency of this manure is, that it is powerful in its effects, occupies but little room, is easily separated, and conveniently used either by hand or drill; its effects are farther to ensure a rich crop, by gradually ameliorating the soil, and rendering fallowing unnecessasy. For wheat, rye, buckwheat, barley, and similar descriptions of corn, about 8 cwt. 1 qr. 16 lbs. is used per acre: it may be either broadcast or drilled in before harrowing. For flax, hemp, beet, potatoes, &c. about 10½ cwt. per. acre; and 12 cwt. 5 qrs. 10 lbs. per acre for artificial meadows, different sorts of cabbage, rape, culinary plants that are set in rows, a handful is put to each plant; for those which are transplanted, a child follows the planter and throws a very small handful of the manure into each hole, which is immediately covered over with earth; in several places for rape, it is scattered out in rows along the roots of the plant, which the plough covers by forming a new furrow.

On meadow land it must be spread out in December or January, when the snow is not on the ground. Generally speaking, it is well to mix the manure with half its quantity of finely sifted earth; but there is no necessity for pursuing this method. On light and warm soils about 2 qrs. 22 lbs. less per acre is [illegible] on cold or clay lands, where an extra 2 qrs. 22 lbs. are added to the quantity as beforehand directed to be used; it is in fact left to the farmer's judgment to make use of the above directions, according to local circumstances. What characterizes this manure most is, that it developes its effects so slowly and gradually, that it may be applied without danger in contact with the seed or roots of plants; in this it differs from a number of other manures which are less rich, but more heating. In Scotland it has been tried in 1834 on eight different soils, has been found nearly equal to bone dust for turnips, and has since been ordered in large quantities from the manufacturer. Mr. Owen, at Copenhagen, who delivers it free on board at 36*s.* per ton."—[Ed. Quar. Jour. Agr.]

Bone manure is held in high estimation both in Europe and this country, and is manufactured in large quantities, and sold at high prices, or 30 to 40 cents per bushel, with profit to the cultivator, but "*animalized carbon*, a new manure," much in use and highly valued, as will be seen by the foregoing extract from the "Quarterly Journal of Agriculture," has not yet been introduced into the United States, nor are we familiar with its ingredients or preparation, yet we presume it to be valuable manure, not however superior to *Poudrette*, which is composed of at least *six* parts in seven of fœcal matter, and one part of a *vegetable* compound which disinfects it of, or *alloys* the offensive odor, and makes it a dry substance, either in powder or in particles from a powder to a walnut, or hen's egg; or it may be made in to any sized cakes convenient for transportation, and afterwards ground, or pounded for use.

It is proper to remark here, that the gentleman who is to direct the operations of the preparation in this city, is familiar not only with the process of M. Payen, but also with every other process used in Europe, yet he does not adopt them, as he has a more speedy, and yet more mild, or less *deteriorating* process of preparation. The ingredients used are *entirely* vegetable, and serve to allay, or absorb, and not to *throw off*, the fertilizing gasses. The whole process is completed in 12 to 48 hours, according to the state of the atmosphere.

This manure will be sold at 25 cents a bushel; or put up in casks holding from 3 to 10 bushels and delivered on ship board for 30 cents per bushel, *warranted* to be prepared in the proportion of *six parts* urine and fœcal, and one part vegetable matter.

It will be prepared and put up under our own inspection, and branded with the brand of the Company. Orders may be addressed to the Editors of the New-York Farmer.

From the Farmer's Register.

ON MANURING.

The subject of manures is of the utmost importance to the agriculturist; for, if no reparation is made of the land, for the draft made by the gathered crops, the soil must be impoverished, and a continuation of the system will end in absolute sterility. Some return must be made for what we take; yet, it is obvious, the mode of manuring must be accommodated to the means of the cultivator. A complicated and expensive system, although applicable to a country where labor is abundant and cheap, and the products of agriculture high priced, would not be suitable to one where labor is dear, and the produce of the soil the reverse. In various parts of Europe, labor can be commanded of the most efficient character and a very raduced rate. In the United States, for the most part, it is widely different; and, if the cultivator of the soil, here, were to employ the processes of fertilizing resorted to, for example, in Flanders and England, he might find his perfect farming leading him speedily to ruin. If, in England, twenty dollars worth of labor is applied to an acre of land, and the produce in wheat amount to forty bushels, the ordinary price of wheat there being two dollars a bushel, there will be sixty dollars left for the farmer, after the expense of cultivation is defrayed. But, in this country, admitting the same amount of labor will produce the same result, the price is at least double that of England, and the price of wheat not more than half. It would require forty

dollars worth of labor to produce forty bushels of wheat, which, at a dollar a bushel, (a full average price with us) would just pay the expense of production, and nothing would be left to compensate for time, trouble, risk, and use of capital. It is incumbent then on us to employ, as much as possible, in our ameliorating processes, agents that are cheaper than human hands. Some we must employ or absolute sterility will deprive our country of the power of sustaining us.

It may be profitable to examine, in this inquiry, by what means nature works in producing her various crops from the soil. No spontaneous cover, as far as we know, leaves the soil poorer than when it began to grow; on the contrary, the earth seems constantly to become richer under its productions. A forest of oaks, chesnuts, &c., would appear the most exhausting of all crops—for a clump of such trees standing in a clear field, produces almost entire sterility for some distance around it. Every body knows, too, that neither grass or grain flourish well near the margin of a field contiguous to the forest. This is not the effect of shade entirely; for, if a ditch is cut between the crops and the forest, deep enough to penetrate below the roots of the latter, the sterility in a great measure ceases. Yet, the land bearing the forest trees, maintains its fertility, and indeed, is constantly improving in that respect—for there is much reason to believe that the far greater part of mould, which covers the surface of virgin land, is derived from the decay of vegetable matter which grows on it. We know the fruitful soil, which covers many of the recently formed islands of the Pacific ocean, is derived from their vegetable production. And there seems to be a class of plants expressly formed to take root on the rising coral islands, when their surface offers nothing but barren sand, and thus to form the initiative of the soil-making process. "This family of plants (the Pandanea) says Dr. Buckland, seems destined like the cocoanut palm, to be among the first vegetable colonists of new lands just emerging from the ocean; they are found together, almost universally by navigators, on the rising coral islands of tropical seas.

The seed thus stranded upon new formed land, produces a plant which has peculiar provisions for its support on a surface destitute of soil, by long and large aerial roots protruded above the ground, around the lower part of its trunk —These roots, on reaching the ground, are calculated to prop up the plant, as buttresses surrounding the basis of the stem, so that it can maintain its erect position, and flourish in barren sand on newly elevated reefs, where little soil has yet accumulated." Geology and Mineralogy, p. 378 and 379.

We see a soil not only maintained, but actually in a great degree formed by the forest which grows on its surface, and exacting, annually, much more for its support than any crop produced by human art. The exhaustion, occasioned by oaks or chesnuts, already mentioned, compared with that of corn, wheat, or tabocco, is conclusive. The most incredulous must yield to such testimony. How comes it then, that the fertility of the forest is maintained, while our arable fields become barren? The answer is obvious. In the one case, a return is made to the soil, in the annual fall of leaves, and in the decaying bodies and roots of dead trees. In the other, every thing is taken—nothing returned. Nature pays her debt punctually with interest. Man pays nothing. His doom, however, is the same in the natural, that it would be in the moral world, for such conduct. His resources are ultimately cut off for his laziness and folly.

We should observe, however, that, whilst nature pays punctually, she pays with the utmost economy of means proportioned to the end. All her processes are of that masterly kind. Nothing is wasted—her return to the earth chiefly takes place at the surface; and we will find the largest return we are capable of making in proportion to our labor, at the surface.

The most powerful agents, known to us, for this purpose, are the grasses—the most efficient of which is red clover, particularly when stimulated by gypsum. With no other aids in many cases, two crops may be taken in every four years, and the fertility of the soil nevertheless increased, as the following facts show:

Eighteen years since, part of a sloping hill was cleared on the writer's farm, the remainder, of apparently equal quality, left in wood.

This spring the surface was opened with a spade through the loam to the clay, in the field and in the wood, and the the depths carefully measured.

High on the hill side, on the cleared land, through the loam to the clay, measured	17 inches.
Twenty yards within the wood, at the same elevation, the loam measured	10½ "
Nearer the base of the hill, within the cleared ground, the loam measured	24 "
Twenty yards within the wood, at the same elevation, the loam measured	10 "

The average difference, between the cultivated land and the forest, being one hundred per cent, although originally of the same quality.

On another hill, and a much steeper one, cleared some years later, and subjected to the same culture, the depth of loam, near the summit within the cleared ground, was	13 inches.
Within the wood, at the same elevation	10 "

The difference, between the two hills in depth of loam, I attribute in part to the steepness of the latter, which subjected it to more injury from washing rains, when the culture was less protective in that respect, than it is at present. And the difference between seventeen inches and two feet, the respective depths of the loam on the first hill, at different elevations, was doubtless influenced in some degree by the same cause.—In other instances, the writer has had land cleared, so poor in its virgin state as to be incapable of the yielding crops at all adequate to the labor of cultivating them, which in a few years, by the aid of the clover and plaster, has produced profitable returns. The following example will show the effects of this system upon land of various qualities. In consulting my memoranda, I find, in 1820, a field of about one hundred acres was cultivated in corn. A portion consisted of worn highland —some was highland of good quality, and about a sixth part was creek low grounds, naturally very rich, but somewhat fatigued by culture. The crop was four hundred and forty bushels of measured corn. In 1836, the same field was put in corn, (with the exception of about three-fourths of the low grounds, which had been separated for a tobacco lot, and substituted by about fifteen acres of ground, cleared from the woods high, steep, and by no means naturally fertile.) Both years were favorable to the production of corn—but the first more than the last—the corn crop of this country having sustained some damage in 1836 from excessive rains. The crop of corn measured last year from the field, was six hundred and seventy barrels, besides what was used for fattening fifty-one hogs, which was not measured, but could scarcely have amounted to less than a barrel to each hog.

Land, capable of bringing good crops of clover, may then be sustained and improved by that grass, with plaster, without any other aid, under the four field system; for no other means have been resorted to, in the instances mentioned, except on a very few spots in the corn field, where the land was reduced below the point of producing clover.

But, we have other sources for manuring from the offal of our crops, farm-pens, stables, &c., and have unfortunately a great deal of land in the country, worn below the clover point, which can be resuscitated only by strong manures, in the production of which, they have little or no agency. The question presents itself, how can we produce the greatest result from our means, limited as they are in many cases, in proportion to the object in view? It must be remembered, that our country has an exceedingly uneven surface, (i. e. the country east of, and near the Blue Ridge,) consisting of hills, many of them high and steep, and subject to great injury from heavy rains, where galls and gullies are easily formed.

Our stable and farm-pen manure requires to be carried out too in the spring, when we are busily employed in preparing for our crops. If the teams can be spared, the ascent of the hills is exceedingly difficult with manure, loaded not only with its own juices, but with a vast amount of water it has received and retained from the atmosphere. Much cannot be carried at a load. If the ground has already been ploughed, the ascent is still more difficult, and it is by no means prudent to leave much of the surface intended for cultivation, unploughed late in the spring. Under these obstacles the manuring, in most cases, would be suspended,

or the manure thrown on some ground more convenient, but less in need of it. The alternative seems to be to adopt a different system as a substitute for manuring in the spring, when we are pressed with the preparation of our corn and tobacco land. I would propose manuring in the winter. The coarse food on which our horned cattle are generally wintered may be collected in the field or fields to be manured; a temporary shelter built there for these animals, and the straw, shucks, corn-stalks, and other things spread for them on the weak spots, most needing assistance, except in very inclement weather, when they should be fed at their shelter. What is left by them of the food strewed over the weak parts of the ground, with their dung, may remain on the surface to decompose; but what is accumulated about the shelter would, generally, lie in too thick a stratum to be treated in the same manner. That might be hauled to the nearest ground requiring it, and either used as a top-dressing, or ploughed in, as might be deemed most expedient. The labor for this purpose could almost, in every instance, be readily afforded. I would not hesitate to winter my cattle in a field intended to remain in grass, as well as one intended for the plough. If the cattle are removed as soon the grass begins to grow in March, no injury is done to it.

The manure accumulated about the stables, does not freeze very hard below the surface in winter. That too, should be carried out at all convenient periods of that season of most leisure, to the ground for which it is intended, scattered and ploughed in at the first opportunity. Sound economy would dictate that so powerful a stimulate should be spread far thinner than is customary and made to go over a much larger surface. By this management, little would be left for removal in the busy time of the spring.

It may be asked whether these processes, as recommended, would not expose the agriculturist to great loss from evaporation? Agricultural chemistry is too imperfect to afford a satisfactory reply to this question. But, the gases formed by the putrefactive process, would unite themselves to the atmosphere, whether they are evolved from the surface, or from manures ploughed in, unless, in the latter case, they should form a chemical combination with substances in the earth and become fixed bodies. It is not known that this happens; and it is pretty certain, that a layer of loose earth, thrown on the manure by the plough, would not be adequate to retain any evolved gas there in a state of confinement. In their passage to the atmosphere only, it is probable they are of no service to the growing crops.

Sir Humphrey Davy filled a retort with hot dung, and introduced its beak in the soil, amongst the roots of some grass in the border of a garden. "In less than a week (he observes) a very distinct effect was produced on the grass upon the spot exposed to the influence of the matter disengaged in fermentation; it grew with much more luxuriance than the grass in any other part of the garden." (Agricultural Chemistry, p. 207.) This experiment serves to prove the advantage of burying hot dung in preference to using it in any other way, although the passage of its gaseous matter is a fugitive process. But it cannot, with us, be carried into effect over a considerable surface at any one time.—And, although the growing crops may be benefitted by the gases given off, it is not shown that the permanent benefit to the land is greater from hot dung than from that which has fully undergone the putrefactive process. I have had many spots cow-penned.—Some have been ploughed as soon as the cattle have been removed; the surface of others has been left exposed to the atmosphere, and I have by no means been satisfied that, in abiding fertility, the ploughed spots had any advantage over the unploughed. Permanent fertility should be our great object, and not the largest amount of crops for any one year. Labor, (although chiefly slave labor with us,) is very dear; the largest results with the least expenditure of that, should be the great object of agricultural attainment. This is to be effected by a condition of permanent fertility.—There are two rules which should not, I apprehend, be lost sight of any where. They are of the last importance to us of this mountainous country. The first is to increase and not diminish the fertility of our soil. The second, is to make enough to support our respective establishments.

Between these two boundaries we may advance with safety, and with more or less speed; but, if we pass either, we are lost. Without capital, independent of our farms, it is clear they cannot be long supported, unless their own produce yields the means. And, if the fertility of the soil is diminished, the means cannot long be supplied by this produce.

Vegetable matter, green or dry, being by far the most abundant of our resources, and productive of the greatest results within our power, in the aggregate, should constitute the first object of our attention, and be regarded as our chief means of advancing fertility, as the ordinary food of a healthy soil, (if I may be permitted to use such a phrase.) The more stimulating manures, which have a larger portion of animal matter mixed with them, should be regarded as medicines (at least in a lacerated and worn country) to be applied to diseased spots—such as cannot cover themselves with vegetation, or do it very feebly, by their own effects.

[To be continued.]

From the Library of Useful Knowledge—Farmers' Series.

MISCELLANEOUS MANURES—CLAY—SAND—POND, RIVER, AND SEA MUD.

Clay.—Such frequent allusions has been already made to the expediency of mixing together different soils of a marked character, as a means of ameliorating their distinct qualities, that it is unnecessary to repeat that recommendation, whenever it can be carried into effect with moderate expense. This advantage is in no case more fully evinced than by laying clay upon sand lands, whether they be of the red, rich, or more valuable descriptions, or those of an inferior quality, which usually contain a portion of moor and white sand. On the former, about 50 tons per acre will effect a vast improvement; but, the latter are seldom brought into a fertile state with less than treble that quantity. The most eligible period to apply it, is in the autumn, or early part of the winter, when the land is in grass, and intended to be broken up for a crop of corn; or otherwise at the same period, when intended for fallow. The frost, rain, and drying winds will then cause the lumps of clay, however large, to open, and by repeated slight harrowing, to divide and intimately cover the surface before the land is ploughed—a circumstance of little trouble if attended to be the proper season, though, if not so reduced before the land is ploughed, large pieces of clay will be found to have been preserved from the atmospheric influence, and consequently unbroken and unprofitable many years afterwards. It is more profitable to repeat the operation after an interval of a few years, rather than to lay on an immense quantity at once, as by this means the clay gets more thoroughly incorporated with the sand; and it will be obvious that the first ploughing ought not to be to the full depth, lest the clay be lost. It is, however, scarcely practicable to lay clay, in its natural state, upon sand, both because of the great labor of digging, and afterwards preparing it with the requisite degree of care for mixture. If not rendered so fine as to be perfectly incorporated with the sand, its tendency to sink through light land gradually brings it to the bottom, and renders it afterwards useless, if not injurious, by forming a retentive soil.

Sand—Is, however, not exposed to the same objections, for it is dug with less labor, and does not require any further trouble in its preparation. Its application, as an alterative for stiff clay land, is of the greatest advantage; for its intermixture with the soil—which is effected by the various means—has a tendency to lighten the land, and to bring it to that loamy state which is the most favorable to the purposes of vegetation. In this respect, its action is the counterpart to that of marl, as applied to light sandy ground; for, in both cases, it is the interest of the farmer to bring his land into that state which is the most likely to be productive. Marl, by stiffening it, produces this effect in the one instance, and sand, by lossening it, in the other.

Until about half a century ago, this plan was very little known as an improvement to the soil, when a spirited agriculturist in Cheshire began to use considerable quantities; sometimes mixing it with dung, and sometimes laying it raw on his grass-lands.—The success which invariably attended these experiments, at length induced several farmers in his neighborhood to follow his example, and the practice has since been very generally adopted in many of the principal dairy-farms in the middle of the country; deep beds of sand being there frequently met with under the clay, which predominates as the superficial stratum of the soil. The mode of employing it is thus described by a land owner who has employed it extensively with the greatest advantage:—

'When there is a piece of strong clay land in tillage, and the

farmer has an opportunity of covering it over with sand, about twice as thick as in a common set of manure, the soil will be pulverized and opened by this means—will give better crops when in tillage, and when laid down will produce a finer herbage, less liable to be parched in dry, or trod down in wet seasons. It is excellent management in the farmer, before he ties up his cattle for the winter, to lay a coat of sand, at least a foot in thickness, where he intends to throw his dung out of the cow-houses. The dung should be repeatedly levelled on the sand, and a second coat of the latter laid on towards the end of February; upon which should be put the remainder of the dung procured before the cattle go to grass. As soon after this time as possible, the compost should be either turned and well mixed where it lies, or filled into the dung carts, and taken away to some situation near the land on which it is intended to use it. Here it should be laid in a heap of at least two yards in thickness; and after remaining two or three months in this state, it is in excellent condition for putting on the land.*

This, however, only alludes to its employment as a compost; but, if laid in its natural state, either as a top-dressing upon a meadow or stiff nature, or slightly ploughed in upon heavy arable land, it will be found to effect a permanent improvement in the soil. It must, in the latter case, however, be laid on in very large quantities; perhaps not less than two to three hundred cart loads, or cubic yards.† This, of course, cannot be accomplished with prudence, unless the sand lies either under the clay, or in the immediate vicinity of the farm; and even in that case, the expense of cartage, if calculated at its cost in money, would appear too serious to admit of much chance of profitable remuneration.—Many circumstances, are, however, continually occuring on every farm to prevent the constant occupation of the teams: on those days they may be invariably employed in the cartage of the sand, without any charge except that of day laborers to dig; and, if it cannot be immediately spread upon the land, it may be laid upon the headlands of the field to which it is intended to be applied.

Mud.—The *mud from ponds*, when they are cleaned out, has always been an object of attention to farmers, so far as regards its collection; but it must be presumed that its different properties, and consequently the most judicious mode of its application to the land, are either but little understood, or neglected; for some cart it directly upon the ground, and plough it in either for turnips or for corn-crops: others spread it upon old leys; and many lay it out in thin heaps to dry, after which they mix it with lime, chalk or dung. Upon this it has been remarked by an eminent agriculturist, 'that in reasoning with the farmers upon the cause or principle by which they are guided in those different proceedings, the reply is generally, "that it has been their practice to do so—that it has answered very well—and that they know of no better mode of treating it." From which we are necessarily led to conclude, that upon the same, or nearly the same sort of soil, these different practices cannot be right. It, therefore, becomes necessary to consider what is the usual composition of the sediment in ponds,—then to point out as correctly as we are able, the best way of preparing it for use—the soils to which it should be applied—and the crops which ought to succeed such application.'‡

Upon this it may be observed, that ponds being usually placed at the lower part of the fields, receive after every hard rain a part of the soil, as well as the substances with which they have been manured. If the ponds be large and deep, they may also acquire much decayed vegetable matter, arising from the aquatic plants with which such pools usually abound; and if near to the yards at which cattle are commonly watered, they must likewise receive a portion of their dung; such mud is, therefore, particularly applicable to light soils, both as containing nutritive matter, and adding to the staple and consistency of the land. If, on the contrary the ponds contain springs, the sediment taken from them will be found unfit for vegetation, for it contains more sand than vegetable matter, and it hardens upon exposure to the sun; it may, however, be useful in killing the rushes and coarse weeds upon low sour meadows, but prejudicial if applied to uplands. It is, therefore, evident that the mud must partake of the nature of the various ingredients of which it is composed; and, therefore, every farmer should take these circumstances into consideration before he applies it to his ground.

The most common time of mudding ponds is during the summer months, when it is usual to let the slime lie near the edge of the pond until the water is drained from it. A spot is then marked, either upon a head-land of the field upon which it is to be laid, or as near to it as possible, of a size to raise a compost with alternate layers of either lime or dung. If dung can be had, the best mode of preparing this manure is to lay a foundation of mud, of about a foot or a foot and a half in depth, of an oblong form, and not more than eight feet in width, upon which the freshest yard dung is laid to about double that depth; then a thin layer of mud; after which, alternate layers of mud and dung, until the heap be raised to about five or six feet in height—keeping the sides and ends square, and coating the whole with mud. It should then be left to ferment; after which, it must be again turned, at least twice, at different periods.

If quick lime be used, and there remains any moisture in the pond scourings, it will be sufficiently fallen for turning in a few days; but, if the compost be made with farm-yard dung, it may require to remain for six or eight weeks to ferment and decompose, before it is in a proper state for turning. To derive the greatest advantage from composts, it is necessary to mix them thoroughly, which can only be effected by repeated and careful turnings. To form them, in the first instance, with both quick lime and manure is injudicious; the former ought never to be brought into contact with the latter—though manures may be advantageously incorporated with an old compost, in which a little lime has been used.

These composts may be applied at the rate of 16 to 20 cubical yards for strong loams, and upon light loams in a rather smaller proportion. Pond mud, is, however, not unfrequently used, in an unprepared state, upon grass-lands; but the accounts given of its effects are so different, and the experiments are so inaccurately stated, that we might mislead our readers were we to detail them. Were attention paid to the properties of the mud, and to the quality of the soil on which is to be laid—in the manner alluded to—there can, however, be little doubt that errors in its application might be avoided. It appears the better mode to apply it in the latter end of autumn, or the early part of winter, and to bush-harrow it well after it has been hardened by the frost.*

River Mud in creeks, or banks, from which it can be collected, answers the same description, and is also extensively employed in some districts in the operation of warping, which will be noticed hereafter.

Sea mud, or *sleech*, has also been used in some places in very large quantities, and has been found of so very enriching a nature, that it was thought worth while to carry it in barges up the river Mersey, to the estates of the late Duke of Bridgewater at Worseley, in Lancashire.† It abounds at the mouths of many of the friths and rivers which run into the sea: and one gentleman, who has used it for upwards of half a century in Cheshire, asserts that no other manure is equal to it, either for corn or grass. It is there, however, always laid upon grass and ploughed in, without any addition, in the following spring. If the ensuing march be dry, and there has been much frost in the winter, a heavy pair of harrows will prepare it for the plough; otherwise, it must be chopped with spades. The land is then generally sown with oats, followed by barley or potatoes, and the third year by wheat. The fourth year the land is laid down either with oats or barley, clover and grasses, and the crops are said to be very great. It is also found that its effects remain longer on the land than marl; and although that which is overmarled is spoiled for grass, yet that never happens to sea mud.‡ In many parts of Scotland it has also been found to answer very well for the improvement of moss; upon which, after

* Hollands Survey of Cheshire, p. 231.

† It has been laid on a large extent of drained moss, in Dumfriesshire, at the rate of a single horse cart load, to every square yard of surface, though the land was in such a soft state that the sand could only be carted by horses with wooden clogs or patterns on their hind feet. The expense must, therefore, have been enormous; yet the improvement in the land seems to have reimbursed the proprietor. See Dr. Singer's Survey, p. 309.

‡ Malcolm's Comp. of Mod. Husb., vol. ii. p. 116.

* Farey's Survay of Derbyshire, vol. iii. p. 187.

† Sinclair's Code of Agriculture, third edition, p. 242.

‡ Holland's Survey of Cheshire, App., No. III.

it has been well drained, the sleech is laid, to the amount of 100 single horse-cart loads per acre.* To this, however, we must add, that the repetition of it in large quantities fail of its former effects. In Sussex, it has been used to the extent of 1200 to 1300 bushels per acre; but, on those farms where it has been too frequently used, and which are thus said to have been "over-dosed," it is no longer found to be of any service.†

From the Farmers' Register.

REMARKS OF MANURES IN GENERAL—PUTRESCENT, MINERAL, AND MISCELLANEOUS.

We have devoted a large portion of this publication to the subject of manures, both because, in the present state of agriculture, arable land cannot be made to pay the expenses of cultivation without the most skilful and economical, though unsparing, use of the various kinds, and because it is notorious that a great number of farmers are either ignorant of the most judicious mode of their application, or negligent of the means of their increase or preservation. The latter remark applies more especially to farm-yard manure, which no one can ride over any part of the country without seeing wasted—dung carted out of the yards and thrown up by the side of some lane without any foundation or further care, until, perhaps after having become mouldy and firefanged, it is at length turned over, while the best part of its juices have been allowed to run into the ditches, or to stagnate around the heaps—thus, neither assisting the proper fermentation of the dung, nor mixing the heap at such regular periods as to ensure its being all of one quality.‡

We have already stated our opinion so clearly on the subject of fermentation, in our view of putrescent manures, that it may be thought hardly necessary to add any thing to the discussion of the point in dispute; yet, as many farmers have been influenced by the reasonings of chemists, who possess no practical knowledge of agriculture, in favor of the invariable application of long dung —though opposed by experience—and as it is extremely important that the question should be set at rest, we request serious attention to the following extracts from an able article which has appeared in the Quarterly Journal of Agriculture since the publication we have written.§

It was promulgated as the opinion of Sir Humphrey Davy, in 1809, and it has, till lately, obtained the confidence of most chemists, that "*as soon as dung begins to decompose, it throws off its volatile parts, which are the most valuable and most efficient. Dung which has fermented, so as to become a mere soft cohesive mass, has generally lost from one third to one-half of its most useful constituent elements; and that it may exert its full action upon the plant, and lose none of its nutritive powers, it should evidently be applied much sooner, and long before decomposition has arrived at its ultimate result.*" Experience has, nevertheless, acted in direct opposition to this opinion. Manure has been continually applied in "a soft cohesive mass," and it has continued to raise large crops; whereas, had it been applied "long before decomposition had arrived at its ultimate result," that result would probably have been a loss of crop, manure and labor.

It is certainly an erroneous assumption to say the first stage of fermentation in dung must necessarily throw off its most valuable parts. Every dunghill of fresh dung throws off a gaseous exhalation a very short time after it is put together; and a quantity thus thrown off is regulated by the state of the atmosphere. But, this exhalation does not consist of the valuable gases; it is mere evaporation of the water contained in the dung. The same hot haze may be seen flickering over a fallow field in a sunny day in summer. Nobody could with truth assert, that this haze arises from the disengagement of the gases in the dung which had previously been inserted into the soil, when it is clearly nothing more than the evaporation of the moisture in the soil. To say, therefore, the first stage of decomposition in a dunghill throws off "the most valuable and the most efficient" parts of the the dung, is just to say the vapor of water is the most valuable part of dung.

"It is true, were the fermentation continued after all the water in the dung was evaporated, a considerable increase of temperature would ensue; and when the texture of the fibrous portions of the manure began to decompose, there would be an evolution of valuable gases. Direct experiment has proved the escape of gases from a heap of dung which has been long fermenting. But, what harm accrues to the dung as a manure from the escape of these gases? None whatever. We are told these gases constitute the food of plants, and if they are permitted to be dissipated by decomposition, the quantity of nourishment in the heap of manure will of course be so much diminished; that, if the bulk of the dung-heap be diminished one-half or one-third by excessive fermentation, the quantity of nourishment to the crops will be diminished in a greater ratio. These cautions have long been whispered in the ears of practical men, but they have listened to the advice with a provoking indifference. Like ducklings when they first take the water, they have continued to disregard every remonstrance of their foster brethren against injurious practices, raising and devouring their food, and enjoying themselves with the greatest complacency in their vocation. It is true, and we must admit it, that some of the gases constitute the food of the plants, but it does not follow that plants would receive them as food directly, as they are disengaged from a fermenting and heated mass; nay, it is probable they would rather reject the food that would injure them.—But, as plants are not endowed with locomotive powers, they cannot avoid the food which is directly presented to them; they will, therefore, be obliged to partake of it in an injurious state, and in thus taking it they die. Accordingly, we invariably find that plants suffer from the contact of fermenting dung; and it is this well known fact, more than from any other circumstance, which deters farmers from applying dung in an unprepared state. It is sometimes applied to the soil, it is true, in an unprepared state, but long before the crop is brought into contact with it, and after it has undergone fermentation in the soil. Though this application of dung is recommended by men of science, it is performed from the very opposite principle which they recommend. They recommend it because the gases arising, while the dung is fermenting, are absorbed by the soil, and are thence given out for the use of plants; on the other hand, farmers perform it because the fermentation will have ceased before the crop in inserted into the ground. Which of these is the more rational reason? The practical one, undoubtedly; for it is surely impossible that the slight covering of earth upon the dung can prevent the escape of the elastic gases, however it may retard fermentation.

"Moreover, practice finds that fresh dung is injurious to vegetation, and recent discoveries now inform us that this arises from the acridity of the ammonia, which is always present in unfermented dung. Fermentation drives off the acrid ammonia. Fresh dung is found to injure plants by *burning* them, which is a very appropriate term to describe the action of ammonia. In like manner, stale liquid manure is not so good a top-dressing to grass as fresh, or when it is largely mixed with water; because science now informs us, that ammonia becomes concentrated in stale liquid manure, and is, therefore, in an injurious state for plants;

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* Singer's Survey of Dumfresshire, p. 311—Gen. Rep. of Scotland, vol. ii. p. 353.

† Young's Survey of Sussex, p. 218.

On this, however, the following remark has been inserted in the report of the committee of the Doncaster Agricultural Association upon bone manure—'The general mode of managing fold manure is erroneous, both as to the expense incurred and loss from evaporation. To prevent both, upon carrying it out to the field, it should be forked up to a considerable height, and the whole covered with the soil nearest to the heap; a long heap, like a potatoe heap, is therefore best; as it accumulates, taking care always to cover the whole of the day's loading, excepting the end to which the next day's work is to be added. The confinement of the steam, which is always observed upon a fresh made heap of manure, effectually secures the decomposition of the whole; which will cut out like a jelly *without the usual process of turning over and over.*'—p. 31.

‡ No. xxiii. pp. 617 to 624. The discoveries alluded to, relate to a substance which chemists call *Humin*, which is said to exist in all soils, and to be formed of carbon and hydrogen. The *Humic acid* is composed of humin and oxygen, and its properties enable it to combine with lime, potash, amonia, and many substances found in soils and manures, and render them easy to be dissolved in water, which could not be done in their separate state.

and that it is necessary to mix liquid manures largely with water, in order to dilute the ammonia, and allow the proper action of the humic acid, which exists in large quantity in them. Again, it is not an uncommon practice to cover a dunghill with earth in hot weather; and this is now explained, not as it hitherto has been—"that the earth absorbs and prevents the escape of the carbonic acid gas"—but that a violent fermentation in the dung is checked by the earth, partly excluding the atmospheric air and rain water, the oxygen in either of which is indispensable to continue the process, it being this oxygen which forms the carbonic acid gas by uniting with the carbon of the dung. The necessity of checking a *violent* fermentation in a dunghill, which contains a large portion of horse-dung, is to prevent it being what is technically called *"fyrefangil"*—a state in which dung is nearly useless.

'We thus see that science now agrees with that practice which has been pursued for years with unexampled success.—It is consolatory to practitioners to think that their experience, though unknowingly to them, has guided them to success on really scientific principles. This agreement of experience and science should teach every one that science and experience, and not science alone, ought to be made the tests to try the accuracy of opinions; but, unfortunately for the credit of sciences, the test of accuracy hitherto, in the application of putrescent manures, has not been submitted to practice.'

We now not only beg to impress upon every farmer the absolute necessity of guarding against the waste of any portion of the farm dung, but also to take care that nothing in the shape of refuse animal or vegetable substance be suffered to be thrown away by his servants. Let a bed of sand, or any earth except clay, be laid in spots adjacent to the offices, and upon it let every particle of offal collected from the premises be regularly thrown; to which add the sweepings of the roads and lanes about the house, grass, turf or rubbish, dug out of drains and ditches; every thing, in short, which, by decomposition, can be converted into manure, and all of which may be got together with very little trouble. Let the whole of this be every now and then covered with the earth, between two layers of which a small quantity of quick-lime may be placed, or sprinkled upon any vegetable substance, such as leaves, tough, haulm fern, or any thing which cannot be easily dissolved, and thus formed into a compost. Care, however, must be taken that the vegetative powers of the roots and plants be completely destroyed before the compost is spread upon the land; for, if unskillfully prepared, they will shoot up in the course of the ensuing season, and overrun the land with weeds. Composts thus formed, whatever may be the ingredients which they contain, will ever be found a most valuable species of manure. The whole substance becomes one uniform mass or nutritive matter, which may be either mixed with the soil, or applied as a top-dressing, and, with proper attention, may be got ready for application at any period of the year. There are numberless receipts scattered throughout the writings of various theorists, in which the quantity and the quality of each ingredient in these various mixtures are as accurately stated as if they were the medical prescriptions of physicians; but these are mere quackeries which do not merit the attention of practical men.

Weeds, also, by the sides of fences, should never be permitted to perfect their seeds, but should be invariably cut while in a state of succulence, and added to the heap; and, if those turned up by the process of horse-hoeing were also raked off, instead of being suffered to wither on the land, or to spring up again with the next shower of rain, it is inconceivable what a large quantity of valuable manure might be raised by the occasional employment of children, and of laborers, who may otherwise be idling away their time. It would also contribute in a great degree to that neatness which forms a distinguished feature in a careful cultivation, and would insure a habit of attention on the part of servants, and a consequent portion of prosperity which can rarely be enjoyed by a slovenly farmer.

Were the *practice of soiling* more generally attented to, it would also materially aid the increase of the dung-heap, without which no profit can be gained from arable land. But a very small portion of the soil under the plough is, in this country, capable of bearing crops, unless it be recruited by putrescent manure about once in four years, or that it be either suffered to lie for a more than usual length of time under the cultivated grasses and fed off with cattle, or supported by the fold. To obtain the requisite quantity of farm-yard manure has, however, baffled the best exertions of many industrious farmers, except in the immediate vicinity of large towns. There, indeed, the object is often obtained through the means of purchased dungs, the expense of which has been generally amply repaid by the growth of proportionally increased crops; but any one who is dependent upon the produce of his own farm, without the substance of extraneous manure, for the support of the fertility of the soil, should endeavor to cultivate those crops which are best calculated to afford a large return of food for the maintenance of cattle. When the land is of such a nature as not to admit the growth of green crops, hay and oil-cake should be resorted to for that purpose.

In other cases, *lime, chalk, marl,* and various other *mineral substances,* have been resorted to as auxiliaries; but, the effect of some of these tending more to stimulate vegetation than to enrich the wasted powers of the soil, it has frequently happened that ground which at one time had been greatly benefitted by their application, has afterwards been injured when repeated under the erroneous notion that its powers might be restored by the same operation. Land, thus forced, has in many cases been so much impoverished as to render it incapable of producing any thing but a poor pasture, and to require a great length time to pass away before it can be restored to its original condition. It should, indeed, be observed, that the application of fossil manures requires more judgment and consideration than any other; for vegetable and animal manures contain the fertilizing property within themselves, and, however injudiciously applied, cannot fail to impart ultimate benefit to the land, if not the immediate crop; but the power of fossils consists in their action upon the constitution of the soil, and if this be improperly directed, the greatest mischief may ensue.

None of these has, perhaps, produced more injury in some cases, or greater benefit in others, than lime—of which very striking instances may be found in those parts of the country where it is either very abundant or scarce. In the former it has been not uncommonly laid upon the land without the aid of putrescent manure, until the soil has become worthless; while in the latter, as its scarcity renders it expensive, it has only been moderately been used by farmers of judgment and capital, and the effects, after a number of years, are still apparent in the improvement of the soil. While writing this, we have under our eye a farm of 400 acres of strong clay, which has not been limed within the memory of men. The tenant, who is conscious of the advantages which might be derived from the use of lime—as demonstrated in the condition of adjoining land of the same quality—is yet prevented by circumstances from its employment; and thus, not only are his own profits, but the value of the soil to the landlord also, equally reduced.

On the subject of *burnt clay,* we have recently had an opportunity of making some inquries in the neighborhood of the late General Beatson's farm, in Sussex; and we have learned, that although several practical farmers in that part of the country adopted his plan, yet very few of them have found it to answer their expectations. One of them, who has followed it extensively, confirms us in the opinion which we have already stated, that much depends upon the mode in which the operation of burning is performed; for if the clay be calcined to the consistence of brick, it yields nothing in the shape of that soft ash which is proper for manure; and, if not sufficiently burned, it will return to its original condition. In the former state it may, however, act in some degree as an alterative of the soil; and, in the latter, it will at least afford some nutriment to the crop to which it is actually applied. It, therefore, does not appear, from past experience, that it can ever be made to supersede the use of lime on land which has not been formerly dressed with the latter; but, in such cases, or in parts of the country where lime cannot be procured, it may yet be employed to a certain extent with advantage.

As to *paring and burning,* there can be no doubt that the earth, if combined with fibrous roots and other vegetable matter, will answer the purpose of manure when burned: yet shallow soils are thus frequently more injured by the abstraction of too large a portion of the surface, than improved by the temporary addition of the manure. We have lately seen down-land, which was broken up during the war, and has been now during several years

returned to pasture, yet still bears nothing like the sward of a fine sheep-walk on the poorest chalks, and probably will require half a century to bring it back to its former condition. We, therefore, cannot but again caution all farmers and owners of land against bringing such soils under the plough.*

With regard to *gypsum and salt* we have nothing to add, except to repeat our recommendation of experiments on their effects.† Though quite aware of the common sentiment—"that gentlemen may use their superfluous cash for this purpose, but farmers have uses enough for their money in the regular routine of their business, and few are so over-burdened with capital as to afford the risk of its diminution by uncertain speculation"—yet we entreat them to reflect, that experiments may be tried with those two articles upon a single acre; that the expense, if unsuccessful, can only occasion the loss of a few shillings; but, if they succeed, may be productive of incalculable advantage.

Neither respecting the various *miscellaneous substances* which we have enumerated, have we any further observation to make upon their respective properties. The fluid or dissolved parts of animal matter require some preparatory process to fit them for manure, the great object being to blend them with the soil in a proper state of minute division; for when they have been applied in a rank or unreduced state, bad effects have followed. *Train oil, blubber*, and similar refuse, should therefore, be made into composts with a large body of earth.‡ *Rape and malt dust*, requiring no mixture, are very commonly laid upon the land as top-dressings—the difference between which and manure ploughed into the ground, is, that the former are applied chiefly with a view to the sole benefit of the immediate crop, without regard to the further improvement of the soil; though there can be no doubt that if the crop be increased, the soil will also feel their good effects. In this manner *soot* is also invariably used; but its fertilizing properties are solely referable to the ammonia contained in it, which is an active stimulant of vegetation. The practice of laying it upon land which has been limed, or of mixing it, as sometimes done, in composts with lime, is therefore injudicious.§

It has long been a disputed question, whether all plants extract the same nutritive juices from the soil, and convert them into the kind of sap adapted to their peculiar qualities, or whether each is nourished by a different substance. It would at first appear improbable that plants differing from each other in form, smell, taste and properties as food, should be produced by the same matter; yet, when we reflect that different plants deprive each other of nourishment, by extending their roots into the same soil in which various kinds are planted, we cannot but conclude that their first nutriment must be of the same nature, though the sap probably acquires different properties in its progress towards perfection. This, however, is one of the secrets of vegetation with which we are unacquainted; but as we also see that some soils are better adapted than others for the growth of particular kinds of grain and vegetables, and that those crops to which they appear the most favorable yet become deteriorated if repeated, even though regularly dressed with one species of manure, it seems evident that there must be some advantage in the change of manure, as well as in the system of cropping tillage land.‖ This will be gained by every farmer who has at his command manures of an unusual kind and who understands their use, for he may then adopt many plans of cropping which are out of the power of others not similarly situated, and vary his rotations according to circumstances of the moment, or to his own convenience.

We have already touched upon the properties of alkaline manures, so far as they have been tested by experience; the solution of the effects of acids upon the soil must be still left to future experiments, for those already made by chemists, in many instances, present different results. Whatever may be the food of plants—whether gasses, oils, salts, or acids—the farmer, however, need not puzzle himself about their chemical qualities, for he may either satisfy himself from the experience of other, or by small trials of his own, whether the effects of any particular species produce fertility or not. Farm-yard manure has been justly called "the farmer's magic wand;" and the oftener that wand is waved, the more will it contribute to his prosperity. He sees that wherever it has been judiciously used, it causes abundant crops, and that wherever it has been withheld, sterility seizes upon the soil; his chief efforts should, therefore, be directed to its increase.

Although the time and manner of applying every description of manures depend so much upon the nature of the soil and season as well as of the crops to be sown, that no precise rules can be laid down for their employment, yet the following general hints may be found useful.

Summary.

When manures of any kind are to be used as top dressings for grass, the best season for that purpose is as early as practicable in the month of February, as the vernal showers will then wash them into the soil. If for arable land, at the same time the sowing of the seed, or immediately after; but if for wheat, when vegetation is about to acquire force, in the spring.

If dung be applied to a wheat crop, it should be ploughed in during the course of a summer fallow; if compots, at the last ploughing before the seed furrow; but compost of lime and earth only, may be laid upon the land during any period of the year.

The land should be laid dry and the manure should be equally and speedily spread over every part of it, in proportion to the nature of the soil; but if ploughed in, though it should be well mixed with the ground, it should not be too deeply buried.

The stronger and the colder soils are, the more manure they require, and, as such land is generally applied to the production of crops which do not speedily attain their full growth, the application of dung which has not been completely decomposed by the putrefactive process may be there admitted, for although the progress of vegetation may not be so rapidly forwarded, yet the manure will at length decay, and afford a more gradual degree of nutriment to the present, and greater support to the land for the production of future crops. On adhesive land, long manure from the farm-yard also acting mechanically, by keeping the soil open, is not so binding as short dung; but on dry, sandy, hot soils, the dung should, on the contrary, be perfectly decomposed, or rotten; and manure of any description should, on such land, be only laid on in moderate quantities at one time. One general observation may be made regarding all dissertations on manure, which is—that as there will be different gradations both of soils and the substance of which manures are composed, we can never speak but in general terms of their application.

The following table will explain how many heaps of manure —each containing an equal quantity of any given amount—are required to dress any field, per acre, at certain regular distances: so that, by calculating the solid contents of the manure in cubical yards, each containing 27 bushels, and dividing it by the number of heaps, the exact quantity to be laid on in each heap may be correctly ascertained:—

No. of heaps at	5 yds.	distance.	193 per acre.
"	5½	"	160 "
"	6	"	134 "
"	6½	"	114 "
"	7	"	98 "
"	7½	"	86 "
"	8	"	75 "

The following remarks of the Editor of the Farmers Register, apply with equal force to the Legislatures of other states, as

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* A treatise has been just published by Professor Rennie, on paring and burning, in which he attributes whatever value it may have to the effects of the fire, considering it "in the light of an instantaneous fallow." Were this principle to be relied upon, it would follow that paring and burning might, within a few years afterwards, be advantageously repeated; whereas, experience proves that, with whatever benefit the operation may be attended with in the first instance, a repetition of it always found to impoverish the soil.—See Quarterly Journal of Agriculture, No. XXV.

† See Chapters xiv and xviii.

‡ "Tallow and oils received in a crude state by the roots, may clog the pores of the plant, repel the aqueous fluid, and obsrtuct the free communication of the leaves with the atmosphere."—Sir H. Davy's Lect. on Agric. Chem. 4to p. 112.

§ Hornby on Lime, p. 26.

‖ Sir H. Davy, Agric. Chem. 4to. p. 273. Doncaster Report on Bone Manure, p. 27. See also the recent "Theory of Rotation of Crops," by M. De Candolle.

well as of Virginia. If legislating for the benefit of agriculture would apparently aid *politicians*, we should witness a different state of things.

REMARKS ON THE AGRICULTURAL SURVEY OF THE STATE OF MASSACHUSETTS.

The commonwealth of Massachusetts has earned a new and most honorable distinction by having, first of all the confederated States, directed the making an agricultural survey of her territory. The execution of this important public work is entrusted to the Rev. Henry Colman, who is very advantageously known as a farmer, and writer on agriculture.

The people of New England are noted for understanding well their pecuniary interest, and pursuing whatever course tends to promote their profit; and we believe they never had a better chance to get back fully, and with increase, their "money's worth," than upon the sum that will be expended in this earliest adventure of this kind, in our new country. If we did not know it to be as vain as "to call spirits from the vasty deep," we should earnestly recommend to the people and Legislature of Virginia, to follow the example of our hard working, frugal, and thrifty sister commonwealth, Massachusetts.

As the first and an essential step towards restoring the health and vigor of a sick man, is for the physician to search out and to learn the nature, the extent, and malignity of his diseases, so is it a necessary preliminary to general extensive improvement of agriculture throughout a country, to know well its existing condition—including all that is wrong as well as all that is correct, commendable and profitable. When the British Board of Agriculture was established, the first and most valuable measure undertaken, was the execution of minute and accurate agricultural surveys of every county in Britain, the results of which were presented to the public in full reports. This part of the operations of the Board, engaged the labors and talents of perhaps fifty of the best informed scientific agriculturists and practical farmers of Britain; and their reports, though confined mostly to statements of then existing circumstances, contained a more valuable and instructive body of information than ever had before been presented to the farmers of that country, and the world. Before that time, many old and useful practices, of some districts, were scarcely known at the distance of fifty or an hundred miles. Among the earliest fruits of the surveys, and obtained almost immediately, were the first public information of Elkington's theory and mode of vertical draining, and the process of "*warping*," (or adding to the soil of tide lands by retaining and depositing the mud suspended by the water.)—the first of which alone, to a country like Britain, was worth the cost of all the county surveys. Parliament even voted a reward of 1000*l.* sterling to Elkington—a rare, if not a singular case of benefits to agriculture being thus acknowledged and rewarded by any government.

The expense permitted to be incurred for the survey of the state of Massachusetts will probably not exceed what the British government paid for the single county of Yorkshire—and of course the performance of service, and the utility, must be slight and imperfect, compared to what might be available. Still, it must be very beneficial to the improvement of the agriculture of Massachusetts; and such a work would be productive of ten fold profit to Virginia, Maryland, or the Carolinas, (without looking further,) because their natural and as yet almost dormant resources for improvement are very far greater than those of Massachusetts.

But neither this measure, nor any of the many by which agricultural instruction and improvement and profit might be advanced by government, are to be hoped for in Virginia. *We have hoped*, but now *despair* of any such movements and their results. Rather than pay $10,000 for the benefit and improvement of agricultural interests, the legislature of Virginia would expend $100,000, in the time and cost of speechifying against any measures proposed for that end. Very recently, an extra session was held, which cost nearly $30,000, (and which was not grudged, and has scarcely been complained of,) solely for the purpose of relieving the banks from the penalties which they had incurred, by violating their legal and most solemn and imperative obligation to pay specie for their bills—and to pleac these institutions, for all future times, beyond all control of any legal or moral obligations, by showing them with what absolute impunity their most solemn and necessary restrictions might be disregarded and contemned. If the question had been to pay as much as this recent expense of extra and iniquitous and destructive legislation, for the most undoubted and solid benefits to agriculture, probably not more than twenty members of the body would have voted for the appropriation; and in such a case, we incline to believe that ten out of the twenty would have been turned out of their places, for that vote, at the next election, by their former friends and constituents belonging to the agricultural interest.

From the Cultivator.

SEED OF THE WHITE PINE.

Robert Burden, of Lewes, Del., is desirous of obtaining half a bushel of seed of the white pine the ensuing fall. It will require thirty-five bushels of cones, or burs, to produce half a bushel of seed. The seeds grow between the scales of the cone; and the latter open about the first of October to release them. The cones should therefore be gathered in September, and after drying a few days in the sun, the seeds will fall out, especially if beaten with a stick. Any person disposed to furnish the seed, may advise the Conductor by letter, post-paid, and state the price for a peck or half a bushel, or address Mr. Burton.

As Mr. Burton's letter contains useful information for the inhabitants of the sea coast, as well as of the prairie west, for making plantations of coniferous trees, we subjoin extracts from it. And we beg leave to recommend his example to others, particularly in the districts already indicated. These young forests will in a few years become important as shelter, not only to farm crops and farm stock, and for plantations of more tender trees, but they will become a source of certain and substantial profit—and will in some measure compensate posterity for the reckless havoc we have made of the primitive forests. In the vallies of the Ohio and Mississippi, the white pine, we understand, is seldom found growing. Its value as a building material stands deservedly high; and the pine forests, upon the streams tributary to the Ohio and Mississippi are fast disappearing. Were it known in the north, that the seeds of our coniferous and other forest trees were in demand, at a fair price, our seedsmen might collect and furnish them in any quantity.

"Twenty-five years ago," says Mr. Burton, "I planted half a bushel of clean seed of the yellow pine, on a poor sandy soil, about five feet apart each way, and now I have trees from them that will measure, one foot from the ground, ten inches in diameter, and in height they are from thirty to forty feet. The seed did not all come up. The way I did, as soon I had gathered the burs, I put them in a loft over the cook room, two or three feet thick, where they would be always dry and *warm*, and in the course of a month or so the burs had opened, and by threshing them with a small rod the seed fell out. I then took the seed and had them rubbed in the hand, to break the small feathers attached to each seed, and then fanned them as clean as wheat.

"The cheapest way for a person to seed his field with pine, is to plant the seed in rows about fifty yards apart, in a north-easterly and south-westerly direction, so that the north-westerly winds which here are the driest winds that blow strongly, may send the seed from the trees which will grow in these rows, across to the other. The seed should be planted shallow, if planted with the hoe. If planted in rows fifty yards apart, the best way is to plough the rows, and sow the seed on the top of the furrow, or to harrow the row, and sow the seed on the place—the rains will settle them deep enough in the earth when the ground is broke a little."

GREEN'S STRAW CUTTER.

A correspondent, who dates Fauquier county, Va., and who "is a feeder of nearly 200 head of cattle, upon the *stall and indoor* plan," asks our opinion respecting the application of horse power to Green's Patent Straw Cutter,—and what quantity of hay or corn fodder, it will cut, with such power, in an hour. We doubt whether this machine, as now constructed, would perform much more if propelled by horse, than it now performs by manual labor. Little can be gained by accelerating its motion; and the strength of a man propels it without fatigue. A very

extensive and intelligent farmer, who visited us while writing this, assures us that two smart men may cut five tons a day, of hay, with Green's Straw Cutter, by manual power.

We have heard highly commended the horse power establishment of a gentleman upon Staten Island, in which the power is applied, at pleasure, to cutting hay and fodder, upon an improved machine,—to grinding grain for family and farm use,—to crushing corn cobs and corn, grinding apples or roots, sawing, &c. We have solicited a plan and description of the building and machinery, the cost, &c., from the intelligent and liberal proprietor; and hope to have the satisfaction, ere long, of laying them before the readers of the Cultivator. Such an application of horse power, upon the farm, has been long a desideratum; and we cannot question the willingness of the proprietor to win the gratitude of his countrymen, by making the communication solicited.

ORNAMENTAL EXOTIC TREES.

A correspondent of Newark, Ohio, wishes us to indicate eight tried exotics, other than the European Linden, of the large class, most admired for park ornament, and where they can be obtained. Were we better acquatnted with the winter temperature of Newark, we could give more satisfactory answers. The American forest trees of the first class surpass in beauty those of the old continent. The sycamore,* English and Scotch elms,* European larch,* weeping willow,* ailanthus,* European ash, and Oriental plane, are the principal species of large exotics found in our nurseries. Of the second class, the mountain ash,* (*Sorbus aucuparia*,) horse chesnut* and European alder,* are very ornamental. Those marked with the asterisk*, as well as the European linden, may be had at the Albany Nursery, though of some kinds the plants are small.

WHITE OAK AND POST OAK.

J. Seelye, of Sharon, Conn., inquires, first, what is the distinction between post oak and white oak, the former being esteemed, at the south, better and far more lasting, than the latter. And second, on what particular day in the year a tree, perforated by woodpeckers, or slightly girdled with an axe, will die. *While oak* is a tree of the first class as to magnitude, and grows in every part of the United States, though in Florida it is found only on the borders of the swamps. It is the only oak, on which a few of the dried leaves persist till the circulation is renewed in the spring. Of all the American oaks, this is the best and most generally used, according to Michaux, being strong, durable, and of large dimensions. The *post oak* resembles somewhat in foliage the white oak, though the lobes of the leaves are broader, and less pointed; and its acorns are not half so large as those of the white oak. The leaf of the white oak has three, and that of the post oak four lobes. This oak belongs to the second class of forest trees, its height rarely exceeding 40 feet. It is not found growing north of the neighborhood of the city of New York, bnt abounds in the middle states and in Florida. The wood is less elastic, though finer grained, and more durable than the white oak: hence it is preferred for posts, and is used with advantage by wheelwrights and coopers. As to the second point of inquiry, we are not aware that there is any *particular* day in the year, and we are sure there is not, when a tree will be killed by the pecking of birds. Trees either die by cutting off the supply of sap, which passes from the roots through the sap wood, or for want of elaborating organs—the leaves—which convert this sap into vegetable nutriment. Cutting through the entire sap wood, at any time in the early part of summer, so as to prevent the ascent of the sap, or divesting it entirely of the leaves, which elaborate this sap, in June, will seldom fail to kill the most hardy tree.

THE WHEAT CROP.

Our letters from Illinois, Michigan, Ohio, and the far west, are *not* favorable to a great product of the wheat crop, this grain having been seriously injured by the winter; and we very seriously apprehend, that the grain worm, which our legislators have considered too insignificant to notice, will lessen the crop of our own state to a most alarming extent. We do not mean to become croakers, but we seriously believe, that the high anticipations of an extraordinary abundant wheat harvest, which our newspapers encouraged, will not be realized—this year.

HAY GRASSES FOR THE SOUTH.

Edward H. Bryan, of Vicksburgh, in the State of Mississippi, writes us, that clover will not succeed there, in consequence of the excessive heat of summer; that they want something that will furnish a winter supply for stock, and he begs us to indicate such grasses as will answer, and asks particularly our opinion of lucern. The soil, says Mr. B., is a stiff clay loam, the climate humid, the nights cool. If the tap-rooted clover will not withstand the summer heat of Mississippi, the fibrous-rooted grasses of the north can hardly be expected to succeed. The lucern is particularly adapted to a light, deep and dry soil, and on such a soil we have no doubt it will do well there. It will withstand heat well. We recommend its trial, and also the gama and Guinea grasses, particularly the gama.

REMARKS OF THE CONDUCTOR.

We have adverted to the subject of bone manure in our second and third volumes, and stated our mode of obtaining and preparing it. We have been less urgent upon this matter, because we saw little hopes of our farmers regarding this source of fertility, while they remained reckless, as too many of them do, of their dung and other sources of fertility which abound on every farm. The subject shall receive our early attention. In mean time, in reply to Mr. Foote's questions, we answer, first—the time *has* come for every farmer to husband and apply to his lands, all the means of fertility at his command. Bone dust will not prove serviceable upon clays. It is applied at the rate of 20 to 40 bushels on an acre. Bone mills can only be profitably erected near navigable waters. Secondly—bones can be crushed in plaster mills, so as to answer well. Thirdly—bones that have been boiled are deemed as good as those which have not been boiled, and old bones nearly as good as fresh ones. And fourthly—not only potato tops, but sedge grass, weeds, straw, and every sort of vegetable matter, or earth abounding in it, as that from swamps, ditches, ponds, &c., leached ashes, soap suds, urine, &c., may all be profitably commingled in the dung yards, which should be made concave in the centre, in order to retain the liquids of the yard, and which these vegetable matters will absorb. And the yard should be thoroughly cleaned every spring, and the contents fed to hoed crops.

SAXON SHEEP AND WOOL.—E. Tilden, Esq., P. M., New-Lebanon, Col. has a flock of 1,000 Saxon, and Saxon and Merino crossed sheep, which he considers of the first grade, and offers a part for sale—the bucks at from five to twenty-five dollars, according to age and quality. Samples of the wool from these bucks, have been deposited, for examination, at the office of the Cultiyator.

J. C. Van Wyck, of Fishkill, Dutchess county, has also a flock of 500 prime Saxon sheep, bred with great care, which he wishes to dispose of—price not mentioned.

PRATT'S STUMP EXTRACTOR.—We have received from J. R. Drake, Esq., of Owego, a handbill which contains a figure and description of this machine, and also certificates of its performance, which we shall forward to our correspondent, J. M. Garnet, Esq., of Virginia. The machine is worked by a pair of oxen or horses, and can advantageously employ five men. It appears from the certificate of H. Hutchinson, engineer on the Chemung canal, that with one of these machines sixty-eight stumps was extracted between 2 o'clock, P. M., and sunset; and that with another two hundred and thirty stumps were extracted in a day. It is applied to green stumps, as well as to those which are partially decayed, and without the previous labor of cutting the roots. Nos. 1 and 2 are heavy, and designed for extracting green stumps; No. 3 is more compact, and may be transported on common wagon or cart wheels. Four men, says Judge D. with two yoke of oxen and a stump-boat, will extract, and convert into fence, stumps enough for fourteen rods in a day.

The price for a first rate machine, with ropes, chains, &c., is nearly $375—without the apparatus the machine is offered at $150, delivered at Albany or Troy.

RUTA BAGA HOE.—We have been presented with a neat little implement for thinning turnips, or other crops, manufactured by Wm. R. Gates, Lee. Mass. It is for sale by Thorburn, at the moderate price of 37½ cents, including the handle.

HOLLOW HORN.—Sylvanus W. Gray, of Middlefield, Ohio, has sent us the following receipt for curing the horn-ail in neat cattle. We publish it, though we confess it smacks too much of quackery. It has too many ingredients, a part of which we suspect are at least useless.

"Take three eggs, same in bulk of black pepper, same of soot same of salt, same of hen dung, mix with wheat flour till hard enough for pills; make nine, and give one at a time three successive mornings, and intermit three, and give three again, &c.

ITALIAN SPRING WHEAT.—There has been an abundance of this grain sown. It looks well, and, the grain worm permitting, there will be plenty of seed. Mr. H. Stephenson, who writes from North Lake, Mich., shall be supplied. The price cannot now be determined. We beg Mr. S. not to forget the beautiful prairie flowers, the seeds and bulbs of which he promises to send us. Mr. S. says, that fall wheat in his district, with some exceptions, will be a failure. We coincide with him in opinion, that in many parts of the country our reliance must ultimately be upon spring varieties of this grain.

PLANT MULBERRY TREES.

We wonder at the remissness of the inhabitants of New-York in cultivating the mulberry tree. That it may, and eventually will, be made the source of considerable profit, there can be no doubt. In many parts of New England, the farmers have already turned their attention to this subject, which will soon add very considerably to their wealth.

Mulberry trees should be planted by the town authorities in the public streets of every town and village; and thus, while they add to the beauty of a hamlet, they may add also to the wealth of its inhabitants. In the south of France, where silk is a staple commodity, the manufacture of it is more or less the employment of a portion of the family of every farmer. The great canal of Languedoc is lined with mulberry trees. The traveller passes over highways overhung with the branches of this beautiful tree, the culivation of which distributes wealth throughout that portion of Europe.

This climate is known to be favorable to the production of silk-worms; and every gentleman of taste, who wishes to combine ornament with usefulness—every landholder who is desirous of increasing the value of his own property, and of adding a stimulus to industry, should have mulberry trees surrounding their houses, planted by the road-side, and scattered over their grounds. By pursuing this plan, the rearing of the silk-worm will in a few years become a profitable employment and fashionable amusement—certainly a harmless one.

SPIKED ROLLER.—Mr. J. Boyle inquires, what should be the diameter of the spiked roller, if made of solid wood? If of plank what thickness—how long the spikes, and how many rows? The size may depend upon convenience or fancy, and may range from twelve to thirty inches in diameter. Any deficiency in the weight of the roller,—for the spiked rolled must be so heavy as to press the spikes or darts into the stiff soil where it is intended to operate,—may be made up by stones or other heavy substances, placed upon the frame. The object is to break and pulverize the ground, and raise a tilth—and consequently the spikes ought to project three inches, and be sufficient in number to effect the entire surface. It will therefore require from eight to ten rows upon a roller two feet in diameter. Concklin's Press Harrow, which very much resembles the spiked roller, has 12 rows of spikes.

BONE MANURE.

J. BUEL, Esq.—DEAR SIR,—I have been highly interested in reading the letters of Dr. Humphrey, recently made public, and as a farmer, particularly so with those relating to British agriculture.

In his 57th No. he remarks:—"The prodigious agricultural resources of the country, are developed, with extraordinary industry, skill and success. The richest and most profitable kind of dressing, which has been tried, and which is a new source of agricultural wealth, to Great Britain, is *bone manure*. In Yorkshire and Lincolnshire, its influence has been almost miraculous," &c.

Now I observe that the richest and most profitable manure to the English farmer, is almost entirely disregarded by the New-York and New England farmers.

My object in this communication, is to get information. I ask, then, has not the time arrived, when bone dust may be profitably used in the older states, where it can be obtained in considerable quantities, particularly on hills, where it is difficult to carry coase manures, and in districts, as in this vicinity, where plaster must be carried from 25 to 35 miles by land? If so, I wish to know if they can be prepared for use in common plaster mills? Also, what is the relative value of bones that have for a year or two been exposed to the atmosphere? And finally, in what way can it be best employed? Should this subject be thought of sufficient importance, a little information would be received with thankfulness, by an attentive reader of your excellent paper.

As we are turning our attention to the cultivation of roots, it appears to me we cannot raise the amount desired, without more manure. Permit me to mention one method of making it which I have found profitable, but is greatly neglected by our farmers.

The present is to be an extraordinary season for potatoes, at least for the vines. I find that by carting these to my hogs, and allowing them to work them over, and mix with their manure a few days, then throwing them in a pile to remain till spring, a large quantity of manure can be made. If not thoroughly decomposed, it makes an excellent manure for ploughing in for corn, or dropping in hills of potatoes. If left on the surface of the field, they are nearly lost for manure, and are very troublesome in tilling the following spring.

Straw is often used for this purpose when it should be used for fodder.

Respectfully yours, L. FOOT,

Lee, Berkshire Co., Mass., July 15th, 1837.

Circular.

Continued from p. 246.

Having thus given a sketch of the manner in which it is proposed to conduct the inquiries on particular subjects, in respect to which it would confer an obligation on me to have your suggestions, or those of any other experimenced farmer, I proceed to other great topics, to be embraced by the survey.

XII. Manures.

1. Animal Manures.

Animal excrements; varieties; comparative value; preparations; uses.

Decayed bodies; Refuse of slaughter houses.

Bone; horn; hair; feathers; wool.

Fish. Fish oil. Gurry and blubber. Soap suds.

2. Mineral Manures.

Lime in various forms and compounds.

Salt. Marine Shells. Gypsum Clay. Sand. Marl.

Dock Mud. Ashes of Mineral Coal. Burnt Clay.

3. Vegetable Manures.

Ashes of wood and peat. Soot. Tanners' Waste. Straw.

Leaves. Sea Weeds. Rape Dust. Street Manure.

Green Dressings, ploughed in. Buck Wheat. Clover.

4. Artificial Manures. Composts.

5. Modes of applying Manure.

Mixed or clear; solid or liquid; in drill or broadcast; in fresh or fermented and decayed state;—at what season of the year or crop;—annually, or how often; in what quantity.

Use and application to permanent pastures and mowing lands.

6. Manure Houses or Cellars; Vaults for the preservation of urine; and provisions for forming compost manures.

Machines for the application of liquid manures.

XIII. Live Stock.

1. Black Cattle. Horses. Sheep. Swine. Poultry.
2. Comparative value of different Breeds of animals for Stall, Work, and Dairy; and notices of herds or individuals of improved Breeds, with places where found.
3. Animals known among us. Native; Hereford; Black Spanish; Devon; Holderness; Yorkshire; Alderney; Ayrshire.
Improved Durham Short Horns.
4. The subject of Breeding.
XIV. Animals for Labor.
Horses and Oxen. Comparative value. Mules. Cost of, keep; harness; shoeing; deterioration or improvement.
XV. Animals for Beef.
1. Sex most eligible.
2. How reared; as calves, how fed; how long with the cow; how managed the first winter.
3. What age at maturity. Age best for fattening.
4. If pastured—average number of acres to an animal.
5. If soiled; how managed and fed.
6. If stalled on dry feed how, fed; how long kept; amount of hay consumed per day; of meal; of vegetables; kinds of meal; kinds of vegetables; how prepared; meal ground with or without cob; mixed or unmixed; wet or dry; cooked or raw.
7. Use of flaxseed; oil; and oil cake in fattening.
8. Gain per day; per month.
9. Machines for cutting and steaming food.
XVI. Market; Returns of Brighton and Danverse Markets.
1. Animals—how sold—on the hoof; or by weight after slaughter. If by weight, how determined; customs of butchers; what parts weighed; what considered as perquisites. Liabilities to error or fraud, if any; customs in other markets.
2. Different parts—how disposed of; relative value.
3. Modes of curing, packing, inspecting, beef, pork, hams, &c.
4. Drift of animals; customs of Drovers; expenses; loss in weight by travelling.
XVII. Animals for the Dairy.
1. Choice of Breeds. Examples and history of Cows of extraordinary product.
2. Size and color as affecting produce. Continuance in milking. Effects of early coming in. Disposition of the calf. Times of milking.
3. Average yield of a good cow in milk; in butter; in cheese.
4. Trials of milk as to quantity of cream; of butter; and of cheese, per gallon.
5. Modes of feeding; vegetables; grain; or meal; how given r prepared; quantity.
XVIII. Dairy Produce.
1. Butter; modes of making and preserving.
2. Cheese; modes of making and preserving.
3. Comparative profits of making butter and cheese.
4. Use of skim milk, butter milk, and whey.
5. Advantages, if any, of giving it to the Cow.
6. Value of dairy refuse for Swine.
7. What proportion between number of Cows kept, and number of Swine kept.
8. Steaming; heating; freezing milk, with comparative advantages of each method for raising cream.
9. Effects of different kinds of salt upon butter. Use of sugar and salt petre for butter. Coloring matter for cheese.
10. Protection from vermin.
11. Grasses for Dairy purposes.
12. Churns; presses; spring houses; pans.
XIX. Swine.
1. Breeds. Maturity, and age for fattening. Average weight when fattened.
2. Mode of raising; in stye or at large; pasturage or soiling on clover.
3. Fattening; value of vegetables; value of meal; preparation of food; raw; steamed; boiled; fermented. Gain per day, per month. Season best for fattening. Time of killing.
4. Assortment of parts; packing of pork; curing of hams; making of sausages; &c. &c.
5. Trial of different kinds of food. Corn; rye; barley; oats; broom corn; peas; apples; potatoes, &c. &c.
XX. Sheep.
1. Breeds; crosses.
2. Yield in wool. Time of shearing. Mode of washing and cleansing. Mode of doing up the fleece.
3. Yield in mutton. Age for fattening; mode of fattening. Comparative value of different kinds of feed. Vegetables; corn; oats; oil-cake, &c. &c.
4. General management. Choice of Buck. Time of lambing. Mode of winter keeping.
5. History of particular flocks.
6. Sheep houses. Sheep racks.
XXI. Horses. Mules.
How raised. How kept. Shoeing. General management. Comparative value for labor.
XXII. Animals kept for Breeding.
Bull. Stallion. Ram. Boar.
Valuable points; defects; general management.
XXIII. Feeding of Animals.
1. Pasturage. Winter keeping.
2. Soiling of Animals; articles to be cultivated for this purpose.
3. Cutting feed. Steaming or cooking. Green vegetable; feed; dry feed.
XXIV. Poultry.
Kinds; Management; Comparative Value.
XXV. Diseases of Domestic Animals.
Of Horses; Cattle; Sheep; Swine; Poultry; and remedies
XXVI. Farm Building.
1. Barns. Stables. Styes. Poultry Houses.
2. Modes of fastening and harnessing cattle. Stalls; mangers; stanchions; ropes; chains; bows.
3. Yokes and harnesses.
4. Dwelling Houses, with comparative cost of stone, brick, and wood. Improvements in apparatus for cooking; and for warming houses.
XXVII. Bees.
Cultivation of Feed for Bees. Construction of Hives. Protection against the Bee Moth.
XXVIII. Orchards. Gardens.
1. Varieties of Fruits, with methods of propagation and selection.
2. Varieties of Esculent Vegetables, with methods of cultivation.
XXIX. Diseases of Trees and Plants.
XXX. Injurious Insects and Vermin.
Borer. Canker Worms. Caterpillars. Potato Worms. Tobacco Worm. Slugs. Bee Moth. Turnip Fly. Crows and Black Birds. Woodchucks. Foxes. Field Mice. Rats.
XXXI. Fences.
Stone Walls. Rail Fences. Live Hedges. Hedge and Ditch. Raised Banks, &c.
XXXII. Forest Trees.
1. For Timber. For Fuel.
2. Modes of raising. Care of Forests. Time and modes of cutting.
3. Nurseries of Fruit and Forest Trees.
4. Plans for Hedges and Fences.
XXXIII. General Improvements.
Clearing Wild Lands.
Removing Stumps and Stones.
Draining
Irrigation.
Paring or Burning.
Gravelling low Meadows.
Improving Peat Meadows.
XXXIV. Great Farming Operations.
1. Ploughing.
2. Sowing; Planting; Laying down to Grass.
3. Haymaking.
4. Harvesting.
5. Preserving and Expending the Produce.
6. Marketing.
XXXV. Examples in detail and in full of
1. General Farm Management.
2. Particular Crops.
3. Particular Improvements.
XXXVI. Labor.
1. Farm Labor by the month or year.
2. " " by the piece.

3. Cost of Board and prices of Provisions.
4. Use of Spirituous Liquor.
5. Laws and Customs relating to Labor.

Mechanical Labor.

1. Blacksmith. Price per pound of Iron.
" Price of Horse shoeing. Ox shoeing.
2. Carpentern' Work, per day.
3. Masons' Work, per day.
4. Wheelwrights' Work, per piece.
5. General cost of Farming Utensils; Carriages; and Equipments.

XXXVII. Farming Implements, &c.

Ploughs. Harrows. Horse Rakes. Cultivators and Horse Hoes. Threshing Machines. Winnowing Machines. Vegetable Slicers. Hay Cutters. Rollers. Drill Machines. Corn Planterrs. Corn Shellers. Wheel Carriages. Stump Extractors, &c. &c.

XXXVIII. Condition of Roads and Improvements in Construction of Roads, as intimately connected with the Agricultural Prosperity of a Country.

XXXIX. Miscellaneous Subjects.

1. Size of Farms.
2. Farm Capital.
3. Farm Accounts.
4. Laws relating to Agriculture.
5. Taxes and Burdens upon Land.
6. Agricultural Pauper Establishments.
7. Agricultural and Manual Labor Schools and Colleges.
8. Agricultural Societies. Funds. Premiums. Operations. Cattle Shows.
9. Agricultural Libraries and Publications.

XL. Manufactures connected with Agriculture.

1. Household Manufactures. Manufactures of wool, silk, flax, hemp, hair, bristles, straw, &c. &c.
2. Leather, with all its various preparations.
3. Glue. Combs. Buttons. Bonnets and Hats from grass, straw, or wool. Wooden Ware. Barrels.

Maple Sugar. Maple Molasses. Beet sugar. Potato Syrup. Starch. Opium. Sunflower Oil. Indian Corn Oil. Linseed Oil. Neat's Foot Oil. Wine from Grapes. Wine from Currants.

Cider. Perry. Beer and Ale. Whiskey. Gin.

Soap. Candles.

XLI. Objects of Particular Inquiry, with a view to Agricultural Improvement.

1. Improvements in Live Stock.
2. " in Utensils and Farm Buildings.
3. " in New Vegetables, Fruits, and Grasses.
4. " in Seeds for earliness and abundant yield.
5. " in economical Preparations and Uses of Food for Man and Beast.
6. " in economical Uses of Fuel.
7. " in economical application of human and brute Labor.
8. " in application of water, steam or wind power to purposes of husbandry.
9. " in cultivation—depth of ploughing; mixing of soils; compost manures; manuring with green crops; inverting and covering the sward; drill culture; sowing broad-cast; management of any particular crop, &c. &c.
10. Improvements in rotation of crops.
11. " in uses of Lime; Gypsum; Bone dust.
12. " in application of Ashes; crude or spent.
13. " in application or discovery of other manures.
14. " in construction of Farm Buildings.

XLII. Exports and Imports of Agricultural Produce.

Capacity of the State to supply its own Wants. General views.

XLIII. Specimens of Soil to be analyzed.

Models of improved Implements.

Models of improved Buildings.

Sketches of improved modes of draining lands.

Collection of valuable Seeds or Plants.

Samples of Wool, Silk, and Sugar.

I have thus, Sir, laid before you the principal objects designed to be embraced in an Agricultural Survey of the State. It is not of course expected that every farmer, possibly not any single farmer, will be able to give me information on every subject here enumerated; nor will ony farm or any town in the Commonwealth furnish examples of all the various crops, operations, and stocks here mentioned. But what is wanting in one, may doubtless be found in another; and as no subject is mentioned in which the agriculture of the State is not directly concerned, it is hoped that much valuable and practical information may be collected in regard to all. It will be my province to to gather up the fragments that nothing be lost. I earnestly solicit, therefore, your particular aid in acquiring this information; and the communicat on of your knowledge or experience, either by writing, conversation, advice, or in any form in which you will please to give it. Any trouble which any gentlemen may take upon himself for the purpose of procuring information shall be always most gratefully acknowledged.

My duty will require me to visit every town in the State; and my wish is to visit every principal farm in every town, the management of which promises to afford useful information. In determining what particular farms to visit, it is obvious that I must necessarily be directed by the advice or suggestions of others, which I shall always be most happy to receive; but, in order to avoid all invidiousness, I beg leave to state distinctly, in the outset, that, unless prevented by extraordinary circumstances, I will visit every farmer, who will do me the kindness to invite me to his premises; and I have perfect confidence in finding often times as creditable and instructive management among small farmers as among those who pursue agriculture upon an extensive scale. I therefore solicit such invitations; and will gladly avail myself of them.

I purpose to make the survey by Counties, and am anxious to prosecute it with all convenient despatch. I beg the farmers to whom this Circular is sent, to give it an attentive and repeated examination. The objects of the survey are most important to the farming interest. I go to seek information from practical men; and shall be happy to communicate all that I receive. I solicit the correspondence and co-operation of such men. It is reasonable to hope that the inquiries will elicit much valuable knowledge; that they will contribute to excite and enlighten a spirit of improvement in agriculture, this most honorable and useful pursuit; that they will unfold agricultural resources and capacities of which we were not fully aware; that they will strengthen those, which already exist and present new reasons for a devoted attachment to our native State; a State, which, if its soil be comparatively hard and sterile, and its climate severe, is in a high degree favorable to longevity, to strength of muscle, vigor of intellect, and moral energy; furnishes an ample reward to patent industry, temperance and frugality; and under the administration of upright magistrates, and wholesome and equal laws, which she has so long and eminently enjoyed, abounds in the elements of domestic comfort, and social improvement and prosperity.

Yours respectfully,

HENRY COLMAN.

Boston, June, 1837.

P. S. Communications and letters relating to the Survey may be addressed to the subscriber at Boston. They may be forwarded by private conveyance to the Post Office in Boston, or directly by mail, if otherwise not convenient.

INDIAN POND SCYTHE STONES are obtaining a decided preference in our market, on account of their superior quality, and are the principal stones now found in our stores. They are obtained at Bradford, Vt, and are manufactured and sold by Filers & Co.

LIME, we mean the carbonate, whether in the form of powdered lime-stone, effete lime, chalk, marine shells or marl, differs in one particular from the other common earths—clay and sand: it decomposes and disappears in the soil—sand and clay do not. Hence the advantage of re-applying calcareous matters to soils at intervals of a few years—of re-liming, re-marling or re-ashing tillage land.

From Quarteyr Journal of Agriculture.

ON MAKING MEADOW HAY.—BY PATRICK MILLER, ESQ., LATE OF DALSWINTON, DUMFRIES-SHIRE.

Making hay is universally allowed to be one of the most important branches of agricultural pursuits, but the principle on which it should be conducted is not at all understood on this side of Tweed.

In England, however, the operation is very differently performed, and with very different and more satisfactory results; for by their system, a great deal of time is saved at a critical period, and a far superior article of food for their animals is produced.

Besides the great and necessary dispatch which is used in England, much skill is also employed to produce and maintain a requisite degree of heat or fermentation in the stack when the hay is put up, in order to convert the juice of the herbage to a saccharine state, which is found to be both more palateable, and likewise more nutritious for all bestial that is fed upon it.

In Scotland, on the other hand, it would almost seem as if diligence was employed to unnecessarily procrastinate the work, and subject it to the risk of unfavorable changes of the weather; and by the excessive bleaching and drying of the grass, which is so universally practised, it is deprived of the possibility of assuming the saccharine quality; and what sap is permitted to remain in it, is converted to starch, which is neither so agreeable nor nourishing for horses as hay made upon the principle which I am anxious to recommend, and from whence arises, as is easily to be perceived, a greater waste of hay in Scotch than in English stables.

Having premised this much, I proceed to detail the practice which I have pursued for many a bygone year on my farm, which, being on a limited scale, I shall therefore confine my description to the narrow compass of my own operations, but which, of course, easily admits of being extended to a larger field as circumstances may require.

When the hay season arrives and the weather is favorable, and when I perceive, by the height of the column of mercury in the barometer, and likewise from the appearance of the skies, that there is a likelihood of its continuing so, I set a couple of mowers to work very early in the morning, each attended by a boy or girl about twelve or thirteen years of age, and, as soon as the men have made half a dozen cuts of the scythe, the two boys or girls take up the swath and shake it out as thin as possible on the ground where it grew, there to lie and wither till after breakfast.

On the return of the mowers from their breakfast, a stout active woman begins to turn with a rake, *in the direction of the sun*, the grass which was first shaken out, the men and the boys cutting down and shaking out in the same way as in the morning.

When the woman has finished turning the early cut grass, she immediately goes to the spot where she began, and shakes it all out again as thin as she can, and when finished, she commences turning by large rakefulls where the mowers resumed their work after breakfast, and continues her task in the same manner as when she began in the morning, always turning as already said *in the direction of the sun*.

On the people returning to the field from their dinner, the two boys immediately begin to shake out that part of the second turned grass which had not been accomplished before going to dinner, and when that is finished, they commence turning what was last cut, and then shake it all out again.

At this period, the two mowers and the woman proceed to rake the first cut hay into what is called a wind-row, and one of the men commences with a pitchfork to put it into cocks of about 10 or 12 stones weight, and between 5 and 6 feet in height, *but on no account is a foot permitted to go upon it, for it cannot be put up too light*, neither is it to be roped, for if the weather is calm, a few hours after it is in the cock it will so compact itself, that it will require a very violent wind to overturn it.

Thus, the hay which was cut in the course of the day will be, through this mode of treatment, sufficiently dried and secured by the evening against any change of weather, which may occur in the course of the night, and it will stand exposure to a storm fully as well as the hay which is so sadly mismanaged by the improper system at present in use.

So far the process only relates to getting quit of the redundant sap in the herbage, but if the hay gets rain or any adventitious moisture, either in working or stacking, it must be carefully dried off before being put into the stack, or so brisk a fermentation will ensue, that combustion will infallibly take place.

The next part of the operation is stacking the hay, and this may take place, if the weather continues fine, on the second or third day after the last cock was put up.

In making this kind of hay, the great and important object is to get it to ferment or heat in the stack, for the purpose of making it evolve its saccharine quality, as in the malting of grain, and is effected as follows:

If a round stack is intended, let a common sack be well crammed full of hay or straw, and placed erect on the foundation where the stack is to be reared, and then begin building all around it with the first cut cocks, intermixing now and then a few of those last put up, in order to promote the fermentation; and when the stack gets as high as the top of the bag, the worker pulls it straight upwards, and so continues working around and pulling it up till the stack is finished, and in this way a chimney is formed for the escape of the nascent gas.

Should a long stack be preferred, then a chimney must be brought out at the peak at each end, and one in the middle by the same means if a large mass of hay is put up in the stack; and in conclusion, I recommend that these vents shall not be closed for a month, or while any perceptible fermentation is going on.

Advertisements.

MECHANICS' FAIR.

Notice to Mechanics, Artisans, Manu-facturers, &c.—The nndersigned give notice that the first Annual FAIR of the Massachusetts Charitable Mechanics' Association will be held in the city of Boston, in September next, commencing on Monday, the 18th, and continuing at least three days.

The Association have placed at the disposal of the Board of Managers, the sum of Five Thousand Dollars, to enable them to conduct the Fair upon a liberal scale; and they hope to be able to render satisfaction to all who may feel disposed to offer articles for exhibition.

Medals or Diplomas will be awarded to the owners of all articles that may be deem-ed worthy of such distinction; and the Managers intend that the strictest impartiality and fairness shall be observed in the distribution of Premiums.

The Managers, in furtherance of the snbject they have in view, invite contributions, of articles from every department of industry; of choice specimens of American ingenuity and skill; rare and valuable domestic productions, natural or artificial; the delicate and beautiful handiwork of females; useful labor-saving machines, implements of husbandry, and new models of machinery in all their varieties.

Judges will be appointed to examine all articles offered, and the managers will award a gold or silver medal, or a diploma, to all articles that may be pronounced by the judges worthy of reward.

Articles intended for exhibition, must be delivered on or before Wednesday, Septem-ber 13th.

Arrangements will be made to exhibit, *in operation*, any working models that may be offered, which will render the exhibition useful and interesting, and the managers respectfully invite contributions in this branch. A careful and competent superintendent will be appointed to take chare of all models sent for this purpose.

Board of Managers.

Stephen Fairbanks,	Jos. T. Buckingham,
John Rayner,	James Clark,
William Adams,	Henry W. Dutton,
Uriel Crocker,	George Darracott,
Gardner Greenleaf,	Wm. S. Pendleton,
James L. Homer,	Charles A. Wells,
James Barry,	Henry Bailey,
Joseph Tilden,	Jonas Chickering,
Ephraim Harrington,	Henry H. Barton,
Joseph Lewis,	Thomas Boyd,
Walter Frost,	Wm. Uunderwood,
Thomas J. Shelton,	George G. Smith,

John G. Rogers.

P. S. For any further information address JAMES L. HOMER, Corresponding Secretary, Boston.

Boston, March 24, 1837. m28-ts1

New-York, June 15th, 1837.

THIRD ANNUAL FAIR OF THE MECHANICS' INSTITUTE OF THE CITY OF NEW-YORK.

The *Fair* of the Institute will be held at Niblo's Garden, commencing Monday, September 25th, 1837.

To render this exhibition worthy of the arts and of the ingenuity of the Mechanics of our country, the Managers appointed to conduct the approaching *Fair* have determined to make such liberal arrangements as will insure to the contributors a fair opportunity of exhibiting their productions to the greatest advantage.

The object of Exhibition Fairs is to present to the members of the Institute and their fellow citizens who are engaged in the Mechanic Arts, the means of making their skill and ingenuity known in a way no other facilities afford: the many thousands who visit such exhibitions have a much better opportunity of judging of the merits of the various productions, than they would have by a mere verbal or newspaper description, besides the advantage of seeing brought together, in one vast collection, the products of the skill, ingenuity, and industry of our country.

PREMIUMS of Medals, Diplomas, &c. will be awarded for *all* worthy or meritorious articles exhibited, either as it respects superior workmanship, machinery wherein the operations are new, interesting or important, where ingenuity is displayed, or taste manifested, and particularly for all new and useful inventions.

You are respectfully requested to send, for competition or exhibition, specimens of the articles you manufacture; and you may be assured that the strictest impartiality will be observed in the distribution of the Premiums.

Steam power will be provided for the accommodation of those who wish to exhibit Machinery in operation; an experienced Superintendant will take charge of this department, and contributors in this branch are particularly invited to send or bring their Machines or models as early as possible, on the 23d September that the necessary arrangements may be made in relation to shafting, pullies, &c.

The Managers, in conclusion, cannot but express their belief that this Third Fair of the Mechanics' Institute, will exceed in variety and beauty of display, all previous exhibitions of the kind.

GEORGE BRUCE, *Chairm.*
WM. EVERDELL,
C. CROLIUS, JUN.
THOS. EWBANK,
RICHARD BRAGAW,
} *Executive Committee.*

N. B. All articles for competition must be delivered to the Committee at Niblo's Garden, on the 23d September. Those for exhibition *only* will be received any day during the Fair, before 10 o'clock A. M.

RULES AND REGULATIONS.

1.—The Garden will be opened for the reception of Goods, on Saturday, 23d of September, from 6 o'clock A. M. until 9 o'clock P. M., and it is respectfully urged that all articles intended for competition may be se t in early in the day. Those articles intended for exhibition *only* will be received any day during the Fair, before the hour of 10 A. M.

2.—The Fair will open for visitors on Monday, 25th Septem- at 10 o'clock A. M., and continue open every day of the exhibition till 10 o'clock P. M.

3.—Competent and impartial Judges will be appointed to examine all articles presented, and premiums will be awarded on all such as shall be declared worthy.

4.—The Committee on Premiums, and all firms or partnerships in which they may be interested, shall be excluded from competition or the award of any premium.

5.—All persons depositing articles, either for competition o exhibition, must attend to have them registered by the Clerk, a which time they will receive a certificate, which will be required of them when the articles are returned.

6.—Proof of origin must be furnished if required, for any specimen offered for Premium.

7.—Depositors will receive a ticket from the Clerk, which will admit them and Ladies during the Exhibition.

8.—Arrangements will be made to exhibit, in operation, all working models that may be deposited—contributions in this branch are invited—a competent person will take charge of all models sent for the above purpose.

9.—The morning of each day, until fifteen minutes before 10 o'clock, shall be appropriated exclusively to the Judges.

10.—Members will receive their tickets of admission by applying at the Institute Rooms, any time in the week previous to and during the exhibition.

11.—All articles offered by Apprentices, will be received, and adjudged as the production of Apprentices—they must furnish a certificate of name, age, with whom, and the time they have served as apprentices.

12.—Articles subject to injury by being handled, should be secured in glass cases—and contributors are requested to have a person to take charge during the hours of exhibition—in the intervals, efficient measures will be taken to protect property.

GENERAL COMMITTEE.

George Bruce,	John Ridley,
John M. Dodd,	Silas B. Simonson,
James J. Mapes,	Thomas F. Peers,
Thomas Ewbank,	Thomas G. Hodgkins,
Wm. Everdell,	George L. Spencer,
C. Crolius, Jr.,	Peter Wemmell,
A. J. Mason,	Richard Bragaw,
Thos. W. Bartholomew,	Ab'm Peitch,
A. Storms,	Wm. H. Hale,
Wm. Ballard,	Wm. J. Mullen,
Henry Cunningham,	James Thomson,
John Harold,	Abner Mills,
Joseph Trench,	L. D. Chapin,
James D. Phyfe,	A. Cammeyer,
John H. Mead,	Hiram Tupper,
John Conroy,	H. B. Robertson,
Jordan L. Mott,	James Thomas,
Samuel Carter,	H. G. Stetson,
George F. Nesbitt,	Ferris Owen,
Henry Worrall,	N. Berry,
W. B. Worrall,	O. Whittelesey,
James B. Cummings,	M. W. Emmons,
James Frost,	J. S. Anderson.

THE CULTIVATOR, J. BUEL, Esq., Editor, is published at Albany, Sixteen pages, once a month, at Fifty Cents a year, *always in advance.*

THE MAGAZINE OF HORTICULTURE, BOTANY *and all Useful Discoveries and Improvements in Rural Affairs*,—Edited by C. M. HOVEY, and published Monthly, at $3 per annum, by HOVEY & Co., Cornhill, Boston, and Isreal Post, Bowery, New-York.

DRAWING INSTRUMENTS.—E. & G. W. Blunt, 154 Water-street, New-York, have received, and offer for sale, Drawing Instruments of superior quality, English, French, and German Manufacture.

They have also on hand Levels of superior quality at low prices.

☞ Orders received at this office for the above Instruments.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE,—Is published *semi-monthly*, at No. 30 WALS-ST., *basemant story*, at *Three Dollars* a-year, *in advance*, by D. K. MINOR & GEO. C. SCHAEFFER.

GEORGE HALL.—Information is wanted of George Hall of the city of New York, who left Newburgh last September; if this should meet his eye, he will hear of something to his advantage, by addressing a letter to his Sister *Jane Hall*, 46 Oak street, New York.—Any information concerning him, will be thankfully received by his Brothers and Sisters as above directed.

THE WESTERN AGRICULTURIST Is published by EDWIN R. SELBY, semi-monthly, at Ravenna, Portage County, Ohio, at One Dollar a year, *in advance.*

☞ Six copies for Five Dollars, and twelve copies for Ten Dollars.

If any of our citizens, who have encountered and survived he storm, desire a comfortable residence on a productive farm, in a healthy part of the country, we would invite their attention to the advertisement of Mr. John White, in this number. His farms, we have reason to believe, are well worthy of notice.

GREAT BARGAINS.

THE subscriber offers for sale 322 acres of Land, known as the late Cook & Haner Farms, on the beautiful valley, near Manlius Centre, in this county—the limestone creek running through it, on which are three Dwellings, three Barns, good Orchard, 200 acres under good improvement, the stumps out, and well calculated for two farms. The Erie canal in sight, *south* and the *Syracuse and Utica Railroad located and being made* about 20 rods from and parallel with the *north* line, and where is to be the first watering place and station from Syracuse for taking in passengers &c. from Fayetteville, the southern and northern villages, &c. For grain, or grass and grain, for the Sugar or Root business, a better soil cannot be found in any country. When this railroad is completed, fifteen or twenty *minutes* of Syracuse, two hours of Utica, a few hours of all the river cities and New-York; indeed, when the railroad now making from Boston to Albany is completed, within a few hours of all the principal eastern cities. Upon these great thorough fares, and all these advantages, surrounded by flourishing villages, strong competition will always secure on the premises, the highest prices for all its products. This is one of the most splendid farms in the state.

ALSO, for sale 120 acres of Land on the Oswego canal *between* and *immediately* at the junctions of the Seneca and Oneida Rivers, embracing the late widow Eno Plat, Tavern stand, &c. &c. The meeting of these splendid rivers, convenient harbor, the canal—one of the great travelling and commercial thorough fares, to the west, the beauty of the spot, surrounded by a fertile country, indicate this as a favorable spot for a flourishing village, or for a residence, farming, gardening, *profit* and *pleasure*; no situation on the North River can be more desirable—the favorable spot for the stations for all the Packet and Line Boats—for a public house, mercantile establishments, and where every thing raised can be sold at the highest prices.

ALSO, a farm of 160½ acres, bounded on the *west* by the Chittenango river, and on the *north* by the flourishing village of Bridgeport, or "the Rifts," two miles south of the Oneida lake, on the northern and shortest travelled road from Utica to Rochester, cultivated, and the stumps out of nearly a hundred acres, fertile and beautiful land, enough of which may be sold for village lots in a few years to pay for the whole. At the head of navigation, at this village, are quite extensive hydraulic advantages —mills, carding and dressing, tannery, stores, public houses, schools, &c. &c. combining to render this a very desirable farm

ALSO, a valuable Cedar Lot about two and a half miles north of Chittenango.

ALSO, as Agent some very valuable Farms in Onondaga and Madison counties.

The above mentioned Farms will be sold on highly advantageous terms. JOHN WHITE.

Syracuse, Onondaga, Co. New-York., June, 1837. 10—m4

FLOWER SEEDS—DAHLIAS, &c. The present month is a suitable season for sowing annual flower Seeds: the subscriber offers for sale a very extensive variety, including many that are new and beautiful, received from London, Paris, and Amsterdam. Packets of 20 select and showey varieties, inclosed in an envelope, with directions for management, $1; a collection of 500 sorts, $5.

Also, Double Dahlias of the most choice varieties, for which a separate catalogue is furnished, can be packed to carry to any part of the country.

Also, White Italian Mulberry Seed, Chinese, do French Sugar Beet Seed, Mangel Wurzel, Ruta Baga, with a general assortment of seasonable Garden Seeds, growth of the last year.

GEORGE C. THORBURN,
11 John street, near Broadway.

☞ Strangers visiting the city are invited to call in the day time —the Aviary and Picture Gallery will be found worthy of inspection. May—6

CONDITIONS OF THE FARMERS REGISTER.—1. The Farmers' Register is published in monthly numbers, of 64 large octavo pages each, and neatly covered, at $5 a year—payable in advance.

2. Or five *new* subscribers by sending their names and $20 at one time to the editor, will receive their copies for one year, for that sum, or at $4 for each. Purchasers of any 5 volumes (except Vol. I.) at one time in like manner, shall have them for $20.

3. The risk of loss of payments for subscriptions, which have been properly committed to the mail, or to the hands of a Postmaster, is assumed by the editor. *All mail payments must be made in notes or checks of par value in Virginia.*

4. For all copies not received by mail, at the proper post offices, duplicates will be furnished to those subscribers who have complied with their own obligations.

☞ 5. If a subscription is not directed to be discontinued before the first number of the next volume has been published, it will be taken as a continuance for another year. Subscriptions must commence with the beginning of some volume, and will not be taken for less than a year's publication.

☞ 6. The mutual obligations of the publisher and subscriber, for the year, are fully incurred as soon as the first number of the volume is issued: and after that time, no discontinuance of subscription will be permitted. Nor will a subscription be discotinued for any earlier notice, while any thing thereon remains due, upless at the option of the editor.

THE WESTERN AGRICULTURIST Is published by EDWIN R. SELBY, semi-monthly, at Ravenna, Portage County, Ohio, at One Dollar a year, *in advance.*

☞ Six copies for Five Dollars, and twelve copies for Ten Dollars.

THE RURAL LIBRARY.—A *publication of standard works entire compiled, abridged, and original, on Agriculture, Gardening, and domestic economy*, in *monthly parts*, by SAMUEL FLEET, at his Agricultural Warehouse and Seed Store, 79 Barclay-street, N. Y., at $3 per annum in advance.

THE MAINE FARMER, Is published every Tuesday morning at Two Dollars per annum if paid in advance, $2,50 if payment is delayed beyond the year.

No paper will be discontinued at any time, without payment of all arrearages, and for the volume which shall have then been commenced, unless at the pleasure of the publishers.

All money sent, or letters on business, must be directed, *postpaid*, to WM. NOYES. Publisher, Hallowell, Me. E. HOLMS, Esq. Editor.

THE GENESEE FARMER Published by LUTHER TUCKER, a Rochester, Genesee Co., N. Y., Terms. The Farmer is published every Saturday, making an annual volume of 416 pages, to which is added a Title page and Index, at the low price of $2,50, or $2,00 if payment is made at the time of subscribing.

☞ All subscribers must commence with the volume, Jan. 1, or with the half volume, July 1. No subscription taken for less than six months.

☞ The monthly Genesee Farmer is made up of selections from this paper, and published on the first of each month, forming, with Title page and Index, an annual volume of 200 pages, at the low price of Fifty Cents a year, *payable always in advance.*

THE FARMER AND GARDENER, This publication is *the successor* to the late AMERICAN FARMER, and is published at the N. E. corner of Market and Charles-sts., Baltimore, Md., at Five Dollars per annum, *payable in advance.* All subscribers who pay in advance, will be entitled to 50 cents worth of any kind of seeds, which will be delivered, or sent, to their order. E. P. ROBERTS, Esq., Editor, SANDS & NEILSON, Publishers.

THE NEW-ENGLAND FARMER, Edited by T. G. FESSENDEN, and published by JOSEPH BRECK & Co., No. 52 North Marketstreet, Boston, is published every Wednesday, at $3 per annum payable at the end of the year—but those who pay within sixty days of the time of subscribing are entitled to a deduction of 50 cents.

☞ No paper will be sent to a distance wihtout payment being made in advence.